BRITISH DESTROYER VS GERMAN DESTROYER

Narvik 1940

DAVID GREENTREE & DAVID CAMPBELL

BRITISH DESTROYER VS GERMAN DESTROYER

Narvik 1940

DAVID GREENTREE & DAVID CAMPBELL

CONTENTS

Introduction 4
Chronology 8
Design and Development 10
Technical Specifications 20
The Combatants 32
The Strategic Situation 40
Combat 45
Analysis 71
Aftermath 77
Select Bibliography 79
Index 80

INTRODUCTION

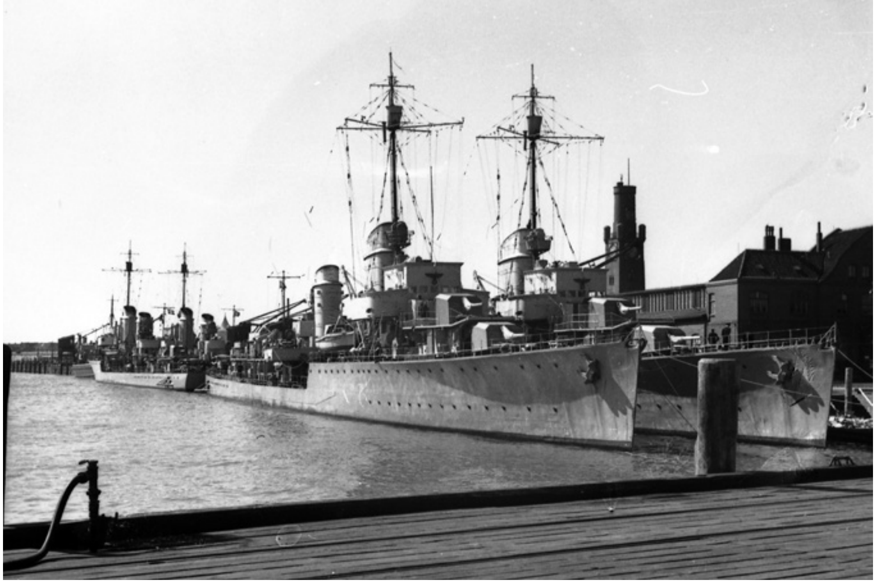
On 9 April 1940, Captain Bernard Warburton-Lee was in a quandary. His small flotilla of Royal Navy destroyers had been sent to northern Norway to escort others laying mines in Norwegian territorial waters; the mines were intended to stop merchant ships carrying iron ore from Sweden through neutral Norwegian waters to Germany. To his surprise, intelligence had arrived informing him that the Germans had invaded Norway. Unknown to him, ten German destroyers had travelled 1,000 miles and earlier that day had landed troops at the port of Narvik, where the iron ore was loaded onto ships, and captured the town virtually unopposed. At 1751hrs, Warburton-Lee signalled that the Germans were holding Narvik in force and that he intended to attack at first light. The use of the word 'intended' indicated that he would do what he had stated unless ordered not to. The reply from Winston Churchill, First Lord of the Admiralty, made it clear that Warburton-Lee was to decide for himself on the best course of action, and that Churchill would fully support his decision (Cope 2015: 137). Warburton-Lee's decision to launch a surprise attack, based on incomplete information and not involving the chain of command, would result in the loss of two of his destroyers and two German destroyers and discourage a break-out attempt by the remainder of the German force. Three days later, the British would send into the fjords the battleship *Warspite* and a larger force of destroyers to complete the German contingent's destruction. The attack was the start of an Allied attempt to oppose the German invasion of Norway.

Of the 15 million tons of iron ore that Germany needed annually, 75 per cent was shipped from Sweden. In winter, the Swedish ports were iced over; the ore was brought by rail to Narvik in northern Norway to be shipped to Germany. Since 1939 Britain's Royal Navy had studied the importance of the iron ore in Sweden to German industry, as had the British government's Industrial Intelligence Centre. Both analyses suggested

The British destroyer *Jupiter* fires its 4.7in guns against Cherbourg in October 1940. These kinds of attacks on enemy ports and coastlines were a common feature of the early months of the war, and it was during just such a German operation that one of the war's earliest destroyer encounters developed. On 7 December 1939, *Z 12 Erich Giese*, guarded by *Z 10 Hans Lody*, was about to lay 76 mines off Cromer on the Norfolk coast when two premature detonations forced the commander of *Erich Giese*, Korvettenkapitän Karl Smidt, to abandon the operation. (A third destroyer, *Z 11 Bernd von Arnim*, had been forced to return to port the previous evening because of engine failure.) *Erich Giese* and *Hans Lody* were steaming to reach the open sea when a lookout spotted two ships approximately 5 miles away, travelling on a parallel course at the same speed. On *Erich Giese*, the gunnery officer using the gun sight identified them as destroyers. The German destroyers increased speed to get level and at 0315hrs, each of them fired four torpedoes from 5,800yd. The British destroyers, *Juno* and *Jersey*, were seemingly unaware of the Germans' presence. *Jersey* was badly damaged by one of the torpedoes. The Germans reported that a U-boat had fired the torpedo in an effort to keep the presence of their destroyer force secret. No Royal Navy J-class destroyers were involved in the fighting at Narvik, but one ship of the K class, *Kimberley*, was at the second battle on 13 April. (Lt H.W. Tomlin/IWM via Getty Images)

that if the shipments from Narvik could be interdicted, the effect on the German war economy would be decisive; however, British long-term strategy involved staying on the defensive in order that the armed forces could grow and was based on the belief that the Allied economies were stronger than the German economy.

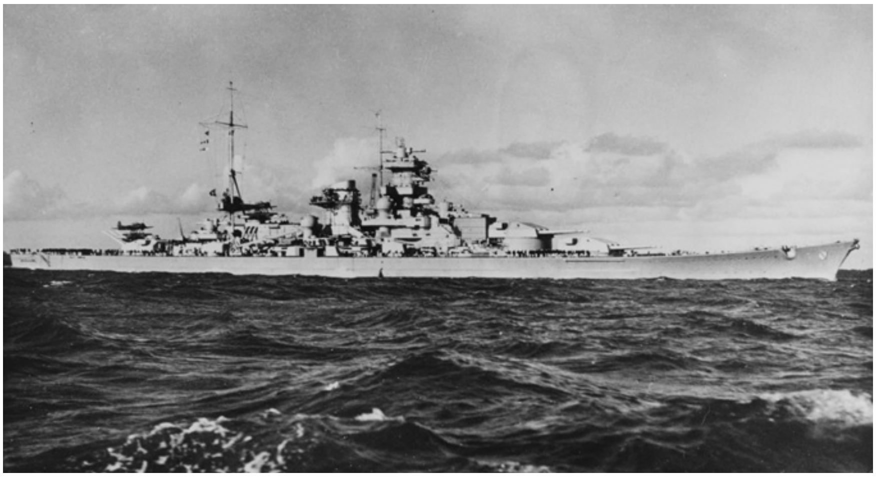
While the Joint Planning Sub-Committee (responsible to the Chiefs of Staff Committee) stuck to this belief, the Chiefs of Staff and Churchill were impatient for action and saw the appeal of an indirect approach to war that would utilize superior British sea power while avoiding continental entanglements and the casualties that would result. The Chiefs of Staff suggested that a brigade deployed on the Narvik–Boden railway could have an effect out of all proportion to its size. They dismissed a German invasion of Norway as impracticable – an assumption that clouded opinion. The Joint Planners disagreed, however, and in December 1939 reported that a German invasion might occur in the near future. By drawing attention to the threat of air bases that Germany could use in southern Norway, the Joint Planners suggested that a larger operation to occupy Norwegian ports would be necessary to forestall a German invasion; this, they stated, would require 80,000 Allied troops and require the diversion of two divisions from France. A force of the size needed could not be put in place until March 1940, but the Chiefs of Staff thought the risks inherent in a larger operation could be accepted in view of the prize. They did not advise the War Cabinet



German destroyers from 2. Zerstörer-Flottille (*Z 5 Paul Jacobi*, *Z 6 Theodor Riedel*, *Z 8 Bruno Heinemann* and *Z 16 Friedrich Eckoldt*) gathered at Cuxhaven on 6 April 1940, immediately prior to their departure for Norway. Britain's Chiefs of Staff advised the War Cabinet that they had made special arrangements to detect a German invasion of Norway, namely Military Intelligence officers who had been sent to ports of disembarkation to report landings – but not to the ports of embarkation to report the sailing of the invasion force. There were other sources that could report on whether a German invasion force was being readied, however. On 27 March 1940, Swedish intelligence indicated that German aircraft and ships were gathering for an invasion; British air reconnaissance provided reports of intense activity at Eckernförde on 4 April; and on 6 April, the US ambassador at Copenhagen reported that the invasion of Denmark and Norway was planned for 8 April. (Bundesarchiv Bild 101 II-MW-5607-03 Foto: Lander)

as to the training and equipment deficiencies of the Territorial Army formations designated as the landing force. Furthermore, taking such action in Norway would entail ditching Britain's long-term strategy of staying on the defensive.

On 5 February 1940 the Allied Supreme War Council agreed to land troops at Narvik; the force would then occupy the iron-ore mines at Gällivare in Sweden. In the event, the British War Cabinet was split – Prime Minister Neville Chamberlain was worried that violation of Norwegian neutrality would have a negative effect on US opinion – and the operation was postponed. Later that month, Churchill used the interception of *Altmark* (a German supply ship stopped on 16 February in Norwegian territorial waters by the destroyer *Cossack*) to reignite debate and dismissed worries that there were not enough Allied troops available to stymie a German invasion of Norway. The Joint Planners warned that Germany's elite forces would be ready to react, but their opinions were not passed on to the War Cabinet



The German battlecruiser *Scharnhorst*, pictured here during the autumn of 1939. Together with *Gneisenau*, *Scharnhorst* was to provide cover for the Narvik and Trondheim invasion forces during Operation *Weserübung* (Weser Exercise), both German vessels engaging in an inconclusive battle on 9 April with the British battlecruiser *Renown* that forced the German capital ships to withdraw to the west, where damage from the fight coupled with problems caused by bad weather and shipped water meant that neither played a part in the engagements of 10 and 13 April. (NH 101559 courtesy of the Naval History & Heritage Command)

The battleship *Warspite*, likely pictured sometime in the late 1930s. Captain Bernard Warburton-Lee's initial foray on 10 April might have been much more decisive if he had enjoyed the support of the battlecruiser *Renown* – a situation that the Royal Navy was determined not to repeat the next time, detailing *Warspite* to act as the heart of the new battle group. The advantages of having such a powerful ship in support were obvious, but it necessitated a separate destroyer screen to clear potential minefields, and the risk of losing a capital ship to a torpedo attack in the relatively close waters of a fjord was a very real possibility. Laid down in 1912 and launched a year later, *Warspite* would serve throughout World War I, fighting at the battle of Jutland in 1916. Refitted at Portsmouth during 1934–37, the battleship would provide illustrious service throughout World War II, seeing action in the Atlantic, the Mediterranean and the Indian Ocean, surviving the war to be scrapped in 1950. *Warspite* mounted eight BL 15in Mk I guns that fired a 1,938lb shell out to a maximum range of 33,550yd; such armour-piercing ordnance was actually too effective on small and lightly armoured destroyers, as shown by the fate of *Z 13 Erich Koellner*, which received a broadside of 18 shells from *Warspite* at a distance of 3,600yd during the second battle of Narvik on 13 April 1940; the huge shells punched straight through the German ship without detonating, rocking it from stem to stern, but not actually sinking it. (Past Pix/SSPL/Getty Images)

by the Chiefs of Staff, who underestimated German capabilities. The Joint Intelligence Committee warned that 1,200 German aircraft could be deployed against an Allied landing force, but were not tasked with looking at German capabilities in detail. In March, the Joint Planners still advised staying on the defensive and not starting a military commitment simply for the sake of doing something; those planners that belonged to the naval staff were sacked by Churchill for being too difficult.

In late March Paul Reynaud, the new French Prime Minister, was pressing for action and despite the imminent reopening of the Swedish port of Luleå, the British War Cabinet agreed that the mine-laying operation – Operation *Wilfred* – would start on 5 April. The closure of German factories three days a week was viewed as evidence of the iron ore's importance, but this closure was in fact prompted by the severe winter that stopped barges from moving. The Chiefs of Staff re-established plans to land at Narvik and other ports. Vice Admiral Thomas Phillips, Deputy Chief of the Naval Staff, urged Churchill to send those forces that could be made available quickly, as he thought the operation could bring the war to a speedy end (Kiszely 2017: 94). The War Office ordered forces to be reassigned on 30 March, but the Director of Military Operations, Major-General Richard Dewing, was concerned that some of the plans being considered appeared to pay scant heed to the realities of the strategic situation (Kiszely 2017: 95). The political future of the French government was governing operations.

CHRONOLOGY

1919

June	The Versailles Treaty limits Germany to 16 destroyers and stipulates that none over 800 tons may be built.

1930

27 October	The London Naval Treaty limits destroyers to 1,850 tons and to guns of 5.1in calibre or below. Britain is permitted to build destroyer tonnage totalling 150,000 tons.

The launch of *Hardy* at Cammell Laird shipyard in Birkenhead, 7 April 1936. As flotilla leader for the H-class destroyers, *Hardy* was a little larger and carried an extra 4.7in Mk IX gun in the 'Q' position between the funnels. Soon after the start of the war the destroyer joined Force K, hunting for German commerce raiders in the South Atlantic, transferring to convoy duties in early 1940 before rejoining the 2nd Destroyer Flotilla as the flagship on 9 March 1940. (Fox Photos/Getty Images)

1934

1 April	Germany's Type 1934 destroyer design – displacing 1,800 tonnes (1,772 tons) and armed with five 12.7cm guns – is approved.

1935

June	The Anglo-German Naval Agreement permits Germany to have destroyers totalling 52,000 tons; the Kriegsmarine announces that 16 destroyers will be built.

1939

1 September	For the Kriegsmarine, 21 destroyers are in commission, with four in dock, one not with the fleet and 16 operational. The Royal Navy has 184 destroyers of all types, with a further 32 fleet destroyers and 20 escort destroyers under construction.
October	German destroyers commence mine-laying operations on Britain's eastern coast. The operations will continue until February 1940.
7 December	German destroyers *Erich Giese* and *Hans Lody* encounter the British destroyers *Juno* and *Jersey* at night off the Norfolk coast.

1940

5 February	Germany assembles a planning group for the invasion of Norway. The Allied Supreme War Council agrees to land troops at Narvik.
16 February	The British destroyer *Cossack* intercepts the German supply ship *Altmark* in Norwegian waters and rescues 300 British seamen being held on board.

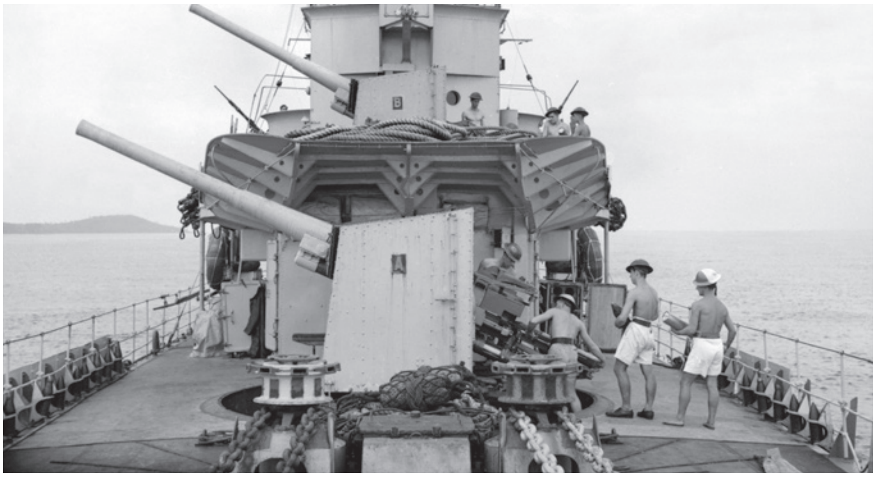
1 March	Germany issues the operational directive that envisages the occupation of Denmark and Norway – Operation *Weserübung* (Weser Exercise).
2 April	Hitler orders the invasion of Norway. The invasion flotillas will depart at various times to ensure landings occur at the same time, early on 9 April.
5 April	Operation *Wilfred*, the British mine-laying operation to interdict iron-ore ships sailing from Narvik, begins; Captain Bernard Warburton-Lee's 2nd Destroyer Flotilla leaves Scapa Flow to escort the 20th Destroyer Flotilla, tasked with laying mines in Vest Fjord on 8 April.
7 April	Ten destroyers of Kriegsschiffgruppe 1, carrying 2,000 soldiers and escorted by the battlecruisers *Scharnhorst* and *Gneisenau*, depart from Bremerhaven and head for Narvik. Allied aircraft detect the German force and the British Home Fleet and the 2nd Cruiser Squadron depart to intercept it.
8 April	During a heavy storm, the British destroyer *Glowworm* scrapes along the side of *Admiral Hipper*, a German heavy cruiser heading to Trondheim, then capsizes and sinks. With mine-laying operations complete, Warburton-Lee is ordered out of Vest Fjord. A British flying boat spots *Admiral Hipper* and 2. Zerstörer-Flottille heading north-west, delaying their approach to Trondheim. Ordered to intercept the German ships heading north, Vice Admiral William Whitworth, on the battlecruiser *Renown*, thinks the storm precludes the enemy from entering Vest Fjord and holds Warburton-Lee out to sea. The German ships now have a clear approach to Narvik.
9 April	Whitworth's command encounters *Scharnhorst* and *Gneisenau*. After a brief gunnery duel, the German ships escape; Whitworth sends Warburton-Lee to Ofot Fjord while he pursues them. German destroyers sink the Norwegian coastal-defence vessels *Eidsvold* and *Norge* in Narvik harbour and land soldiers to capture the town.
10 April	Warburton-Lee enters Ofot Fjord, his force surprising five German ships anchored in Narvik harbour, sinking two German destroyers and inflicting heavy damage on a third. Five German destroyers in side fjords ambush Warburton-Lee's force; he is mortally wounded, the crew of *Hardy* scuttle their ship and *Hunter* is sunk.
13 April	Whitworth enters Ofot Fjord with the battleship *Warspite* and nine destroyers, accompanied by aircraft from the carrier *Furious*. All eight remaining German destroyers are either destroyed or scuttled. Two British destroyers are badly damaged.

A fine view of the Type 1934A German destroyer *Z 7 Hermann Schoemann*, depicted here in what is almost certainly a pre-war photograph as the pennant numbers on German ships were painted over on the outbreak of war. Of the 12 Type 1934A destroyers, five would survive the war with the remainder sunk by mines, scuttling or combat, including four on 13 April 1940 at the second battle of Narvik. *Hermann Schoemann* was not to play much of a part in the Norway campaign due to ongoing problems with its engines. Two years later, on 2 May 1942, the ship was severely damaged by gunfire from the light cruiser *Edinburgh* while trying to launch a torpedo attack; with both engines disabled and under further attack from three more British destroyers, *Hermann Schoemann*'s crew scuttled the ship. (Bundesarchiv Bild 134-B0668 Foto: o. Ang)

DESIGN AND DEVELOPMENT

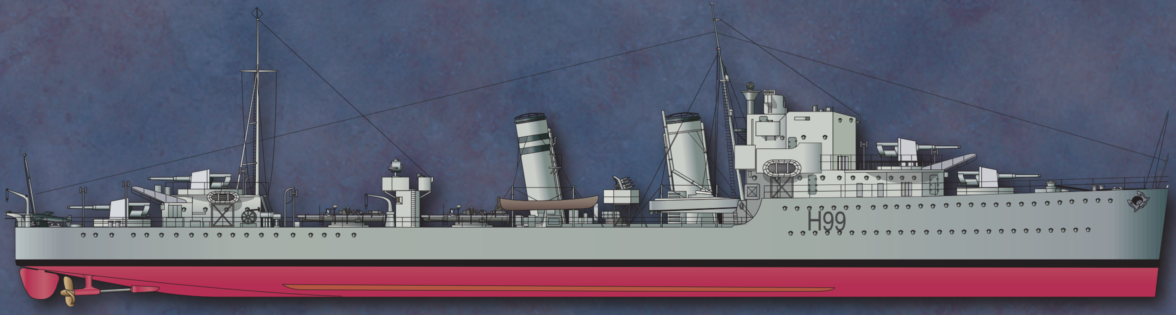
BRITISH DESTROYERS

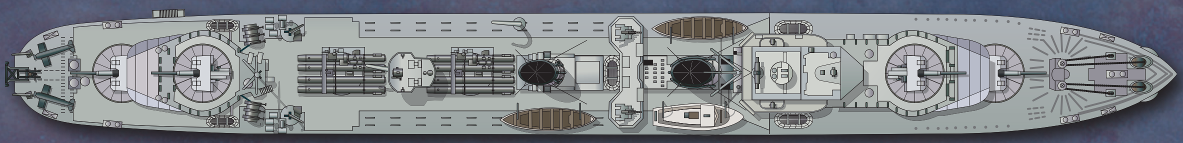
Despite the unquestionable might of the Royal Navy at the end of World War I, the following years would see a gradual diminution in the scope and capabilities of the Senior Service. The Washington Naval Treaty of 1922 (reaffirmed in 1930) imposed budgetary restrictions that curtailed the size and number of capital ships as well as



A fine profile view of the 'A' and 'B' turrets on *Foxhound*, shown here at Freetown, Sierra Leone, August 1943. The ubiquitous 4.7in Mk IX gun equipped nearly all Royal Navy pre-war destroyer classes, despite the limited elevation of its mount that made it difficult to engage in high-angle anti-aircraft fire. *Foxhound* survived the war, being scrapped in 1947. (Royal Navy Official Photographer/IWM via Getty Images)

HERO

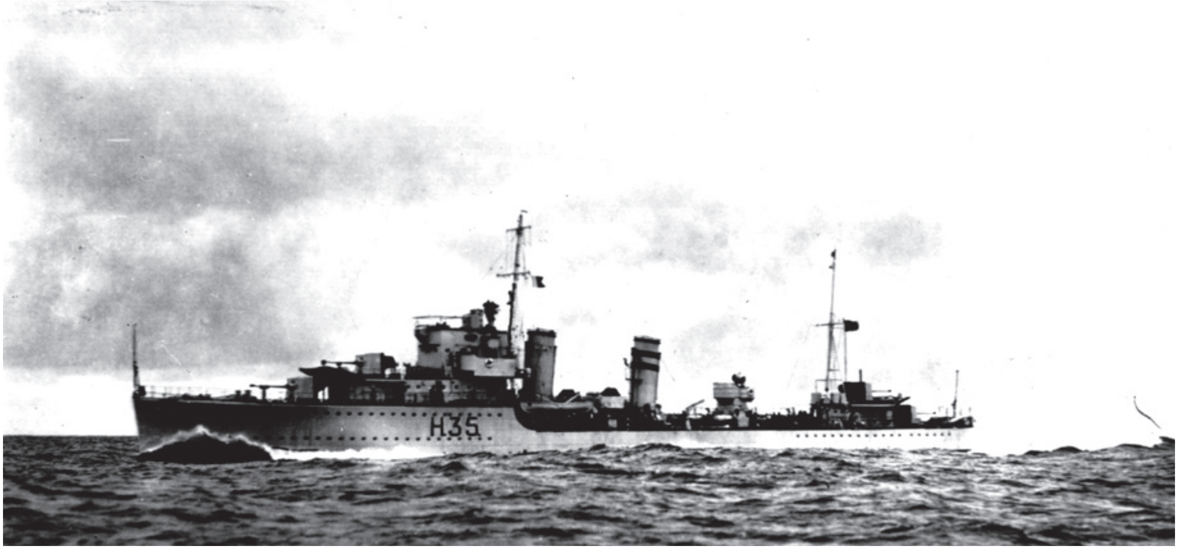




Ordered in 1934, *Hero* was one of eight of its class (excluding the flotilla leader, *Hardy*). *Hero* was laid down by Vickers-Armstrong in Newcastle-upon-Tyne and launched on 10 March 1936. The G-, H- and I-class ships were all of a similar size, with negligible differences in speed, range and armament. The G- and H-class destroyers were 323ft in length overall, had a beam of 33ft and a draught of 12ft 5in mean. *Hero* served as an escort to the battlecruiser *Renown* during Operation *Wilfred* and fought at Narvik. *Hero* then transferred to the Mediterranean, serving as a convoy escort and participating in the sinking of two U-boats (*U 559* and *U 568*) in 1942. In 1943 the ship was refitted to be an escort destroyer and transferred to the Royal Canadian Navy, where it was renamed HMCS *Chaudière*. The ship survived the war, being broken up in 1950.

cruisers, but destroyers were omitted, in part due to British and French objections. Even so, the large number of destroyers in service in 1918 meant that it would not be until 1924 that work started on developing new destroyer designs. Originally developed as 'torpedo boat destroyers', they were meant to be a defensive measure against torpedo-armed craft that might attempt to attack shipping in or near friendly ports, but soon enough they had grown large and fast enough to both mount their own armament of torpedoes and accompany battle fleets out to sea. In that capacity they operated as scouts, escort screens for capital ships, and as flotillas that could make massed torpedo attacks on enemy ships. Such flotillas were usually made up of around eight to ten ships of the same class, and by 1918 they had evolved into multi-disciplinary workhorses, capable of engaging in limited anti-aircraft defence and anti-submarine warfare in addition to their duties in support of the fleet.

The flotilla system had worked well enough on an operational level for a while, but it was found to be too restrictive when it came to the more fluid and far-reaching



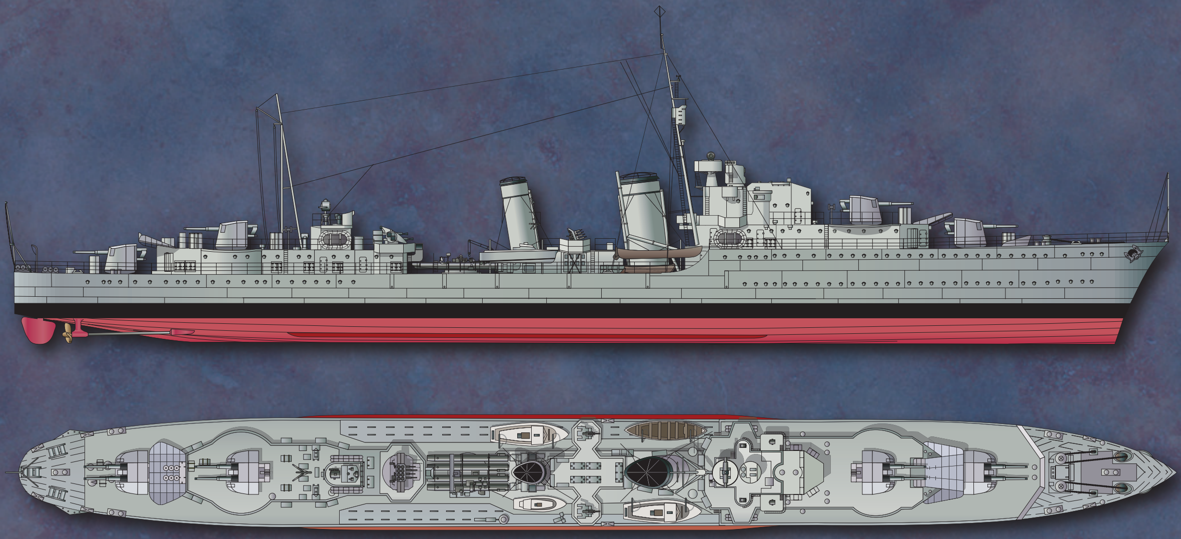
Hunter pictured at sea, *c*.1937. *Hunter* was severely damaged by a mine on 13 May 1937 while patrolling off the coast of Spain during that country's civil war, necessitating more than a year's worth of repairs. During the first battle of Narvik on 10 April 1940, *Hunter* scored a gunnery and torpedo hit on *Z 22 Anton Schmitt* during the raid on the harbour, but was badly damaged during the British attempt to evacuate from Ofot Fjord; making little headway and wreathed in smoke, *Hunter* was rammed by the temporarily out-of-control *Hotspur*, leading *Hunter* to capsize with the loss of 112 crewmen. (Arkivi/Getty Images)

requirements that were already becoming apparent by the end of World War I. Nevertheless the British destroyer construction programmes from the mid-1920s to the late 1930s were all organized on the principle of building one new batch of destroyers per year, usually a flotilla comprising eight ships and a ninth to act as the flotilla leader (a slightly larger variant of the same class, the greater size of which accommodated the additional staff and the command-and-control functions that such a vessel would be required to handle). Flotillas would remain, but in an administrative rather than a tactical role, while destroyers were categorized as being either fleet or escort ships, the former expected to fulfil their usual functions in support of a battle fleet, the latter (usually older and slower ships) to perform the same role but in support of merchant convoys.

The new development started with two trial ships, *Amazon* and *Ambuscade*, both launched in 1926; their success led to the new A-class ships that were launched in 1929, an improvement on the earlier ships that included the TSDS (Two-Speed Destroyer Sweep) mine-clearing system and the new quadruple torpedo tubes. The succeeding iterations of destroyer classes would all be modest evolutions of those that had come before, growing gradually larger but seeing no significant changes of design until the G-, H- and I-class destroyers. The London Naval Treaty of 1930 imposed limits on overall destroyer tonnage, so the new classes were designed to be shorter and lighter, using a double boiler room next to the engine room, though armament (based on four single 4.7in guns and a pair of rotating torpedo-tube launchers carrying eight or ten torpedoes) remained essentially the same.

The mid-1930s saw an evolution in several navies towards better-armed, faster destroyers that would be able to outclass existing ships as well as act as potentially independent raiders, a trend evident in both the French and Italian navies and also realized by the Germans in their Type 1934/1934A programmes and the Japanese with their Fubuki-class ships. In the wake of these new developments in European (and particularly Japanese) destroyer design, the Admiralty decided to develop a destroyer more capable than those that were currently under construction, resulting in the

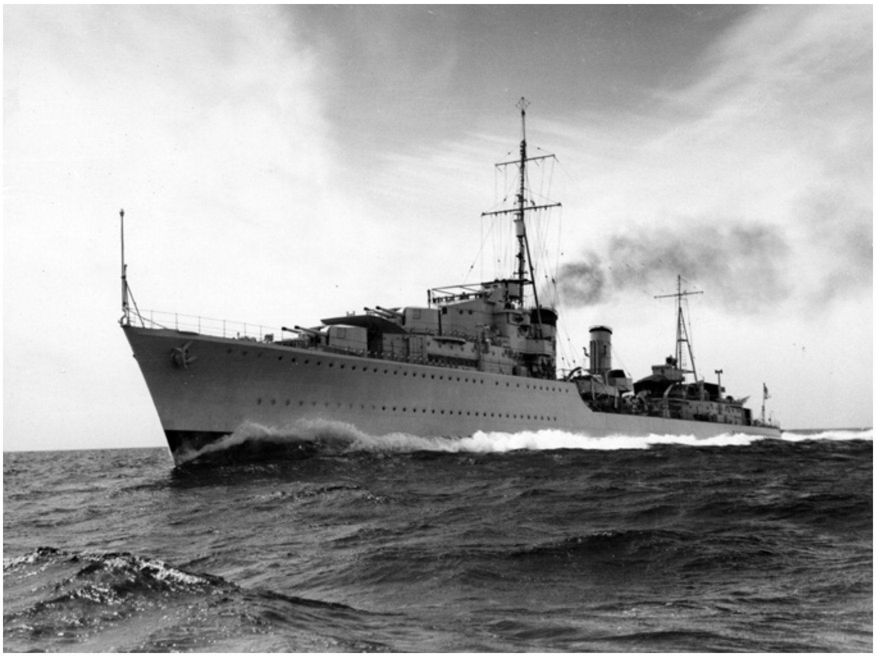
BEDOUIN



An illustration of *Bedouin*, a Tribal-class destroyer that took part in the second battle of Narvik, 13 April 1940, with its sister ships *Eskimo*, *Punjabi* and *Cossack*. Built by William Denny of Dumbarton, *Bedouin* was ordered in 1936 and launched in December 1937 (all 16 Tribals were launched that year), being commissioned in March 1939. Developed in part as a reaction to the new classes of larger, better-armed German destroyers, the Tribals were gun heavy (eight 4.7in Mk XII guns in four twin turrets), and carried one set of quadruple torpedo tubes instead of the usual two. On 15 June 1942, *Bedouin* was sunk by the Italian cruisers *Raimondo Montecuccoli* and *Eugenio di Savoia* in concert with an aerial torpedo attack south-west of the island of Pentallaria near the east coast of Tunisia, making the destroyer one of 12 Tribals lost during the war, only four surviving.

Tribal-class ships that were ordered in two batches (one of seven and one of nine) in 1936, with all 16 launched in 1937 and commissioned in 1938–39. There was to be no 'flotilla leader' variant for the Tribals, with four ships fitted out with the increased accommodation required for leader's duties, but being externally indistinguishable from their sister ships.

The Tribals would go to sea with only one set of quadruple torpedo tubes, the weight of a second set having been sacrificed in favour of guns, of which they carried eight (4.7in) in four twin turrets. Later destroyer designs would revert to the old pattern of a pair of quadruple (or pentad) launchers, but in many cases this proved temporary, with the second set often removed to enable the installation of anti-aircraft weaponry, the need for which was much more pressing. There was a bias within the Royal Navy towards gunnery that may have impinged upon the use of the torpedo as an offensive weapon, but the relatively low numbers carried coupled with the specific requirements of their use may also have counted against them. By 1939 there was a



An excellent view of the Tribal-class destroyer *Afridi* in 1938, demonstrating the class's handsome lines and showing off the forward turrets and bridge to good effect. The Tribals were designed around a powerful gun armament in anticipation of surface action, each sporting eight QF 4.7in Mk XII guns in four twin turrets. Each Tribal-class destroyer displaced 1,854 tons, with a length of 377ft overall, a beam of 36ft 6in and a draught of 9ft mean. The increase in the number of guns shipped meant that the Tribals – bigger than other pre-war destroyers and with a deck already reinforced for weapons platforms – proved to be more readily adaptable to an increase in the anti-aircraft armament that proved so necessary after the war's costly early losses. Working from April 1940 as a convoy escort off the Norwegian coast, *Afridi* took part in the evacuation of the last remaining Allied troops in central Norway, where the ship was attacked and sunk by Ju 87 Stukas on 3 May 1940. (Charles E. Brown/Royal Air Force Museum/Getty Images)

belief that their use in destroyers was becoming obsolete, partly due to the diminishment of the destroyer's role in massed attacks against enemy cruisers and capital ships (Lavery 2006: 174), though the value that such a weapon still had was certainly demonstrated at Narvik. In all there were 383 successful torpedo attacks launched from all classes of Royal Navy surface vessels during the war (Lavery 2006: 94), the majority of them certainly from torpedo boats, though destroyers probably accounted for around one-quarter of the positive hits recorded.

The Tribals were the last destroyers designed with transverse framing of the hull, i.e. the frames that gave the hull its shape were attached along the length of the keel (the J- and K-class destroyers would use frames built along the length of the hull instead) and two funnels. They had three Admiralty three-drum small-tube boilers (with a working pressure of 300psi at 620°F) in three separate boiler rooms, with an engine room immediately abaft No. 3 boiler room containing two Parsons single-reduction geared turbines that could develop 44,000hp, giving a theoretical top speed of 36kn, though 34kn was more realistic in service. Shortly after the outbreak of war the Tribals were grouped into the 4th and 6th Destroyer flotillas, but they were quickly dispersed among various forces based on immediate need, often operating in smaller numbers with other destroyer classes, much as at Narvik.

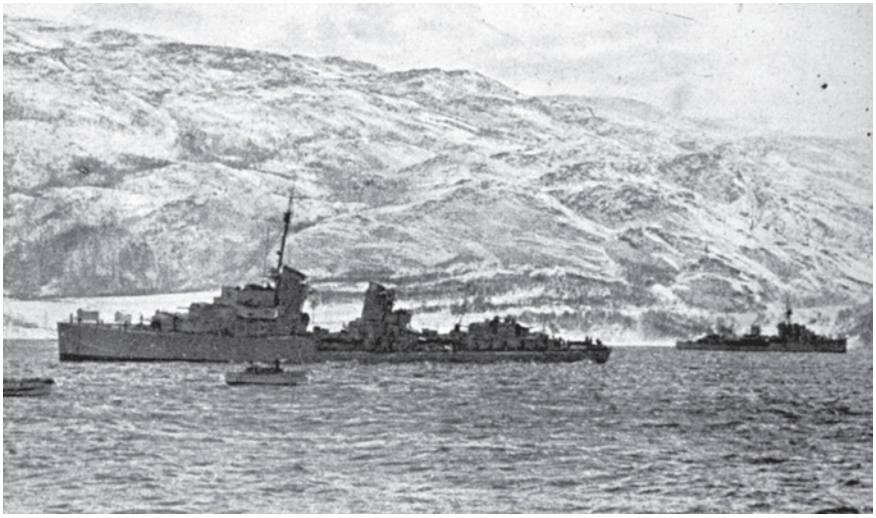
It is arguable just how much benefit accrued from larger, faster destroyer designs during this period. The German ships proved top-heavy and could not match the sea-keeping qualities of the better-designed British G-, H- and I-class ships – a significant failing when so much of naval combat relied on attaining a good position from which to fight. In addition, high speeds on their own were also of limited value, as sea-keeping would likely suffer and gunnery would be markedly more difficult; sound judgement and good tactical handling were just as important when it came to 'fighting' one's ship (Lyon 1970: 26).The eight guns installed on Tribals did give them more ‘punch’ than that available to H-class ships, but the realities of naval gunnery meant that long-range hits were very hard to obtain even in good conditions (especially considering the relatively limited British range-finding systems employed prior to the later introduction of radar-controlled gunnery), while at closer ranges it did not take a lot of hits to inflict significant damage on lightly armoured destroyers. The relative advantage of four more 4.7in guns was far less valuable than an efficient anti-aircraft defence, resulting in the removal of the ‘X’ turret on the surviving Tribals during refits from late 1940–early 1941 onwards in favour of the QF (Quick Firing) 4in Mk XVI gun that fired a 35lb projectile out to a maximum of 19,850yd, but which could also elevate to 80° and had a ceiling of 13,000yd. Finally, it is worth remembering that destroyers, while valuable, were not seen as irreplaceable, and it was considered reasonable to risk their loss if the rewards were great or the situation serious enough; numbers were more important than an individual ship’s fighting capabilities.

GERMAN DESTROYERS

The Versailles Treaty of 1919 allowed the Germans to retain 16 of the 225 destroyers they had during World War I, as well as 16 torpedo boats, but with only 12 of each to be in commission at any given time, and stipulated that destroyers over 800 tons must not be built. As a result, ships developed in the 1920s carried three 10.5cm guns and six torpedo tubes and were more like torpedo boats. The London Naval Conference in 1930 set a new limit on destroyer displacement at 1,850 tons. In 1932 the Schichau naval yard proposed a vessel of 1,500 tonnes (1,476 tons) with four 12.7cm guns. Admiral (from 1 April 1939, Großadmiral) Erich Raeder, Commander-in-Chief of the Reichsmarine, increased the requirement to 1,800 tonnes (1,772 tons) and five

A Type 1934 destroyer, photographed in 1939. The initial designs for the class had begun in 1932 when German destroyers were still limited to a displacement of 1,850 tons, a little more than half the size of comparable Royal Navy destroyers of the period. Despite such strictures, the evolving international situation – coupled with Nazi Germany’s deliberate policy of pushing the boundaries set by the Versailles Treaty of 1919 – meant that plans for the new ships evolved rapidly, almost tripling in displacement by the time the first of them was laid down in 1934. (© CORBIS/Corbis via Getty Images)

Of Germany's 12 Type 1934A destroyers (*Z 5*–*Z 16*), four were lost at Narvik (*Z 9 Wolfgang Zenker, Z 11 Bernd von Arnim, Z 12 Erich Giese* and *Z 13 Erich Koellner*), one was lost to mines (*Z 8 Bruno Heinemann*) and two to surface action (*Z 7 Hermann Schoemann* and *Z 16 Friedrich Eckoldt*) in 1942. Here, *Erich Koellner* is visible in a side fjord, probably just prior to its relocation to Djupvik Bay. The destroyer in the background is likely to be *Z 19 Hermann Künne*, which was supposed to act as its escort. (Bundesarchiv Bild C-134-C2579 Foto: o. Ang)

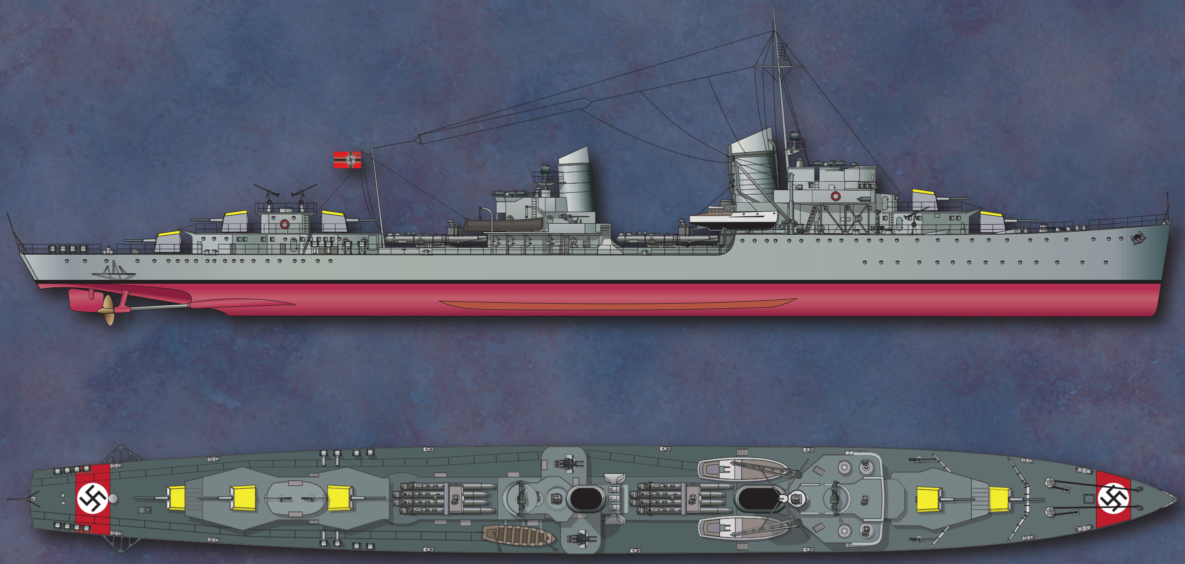


12.7cm guns, and on 1 April 1934 the design was approved as the Type 1934. In 1935 the Anglo-German Naval Agreement cleared the way for Germany to have a total of 52,000 tons in destroyer weight and the Kriegsmarine, as Germany's navy was renamed that year, announced that 16 destroyers would be built. Raeder thought the treaty would be the basis for a future peaceful relationship between Britain and Germany.

Armament to match that of the British destroyers was a determining factor in the design, but the installation of five 12.7cm guns would result in problems with stability and strength that would limit range. Speed was also a vital requirement as the destroyers were intended to screen the larger fast ships of the battle fleet and also because they would be used as minelayers in shallow waters against a more numerous and powerful enemy. These aims were in conflict with one another and, while a limited operational area was envisaged with the Baltic the main operating area, seaworthiness was not a priority, despite German strategic aims in a world war that would focus on seizing Norwegian and French bases in order to facilitate operations in the Atlantic.

In May 1938 Hitler confirmed to Raeder that a war with Britain was likely. Fregattenkapitän Hellmuth Heye, a staff officer, was given the task of providing strategic options and suggested an attack on Britain's maritime communications. The intention of German strategy was to break the naval blockade the Allies had implemented during World War I by attacking their trade routes. The idea of a 'fleet in being' – treating the fleet as a strategic asset that remained in port, the very existence of which compels the enemy to maintain an equivalent deterrent force – was believed to be too pessimistic. Vizeadmiral Otto Schniewind, the Chief-of-Staff of the Seekriegsleitung (Naval Warfare Office), thought that the Kriegsmarine would operate not just in the North Sea, but across the world's oceans (Koop & Schmolke 2003: 15) and that numerous opportunities for successful operations conducted by small ships would still present themselves. The strategy would be assisted by using bases overseas and the Kriegsmarine would be helped by the Luftwaffe. Hitler wanted a fleet capable of defeating the British High Seas Fleet, however, and demanded battleships. By the

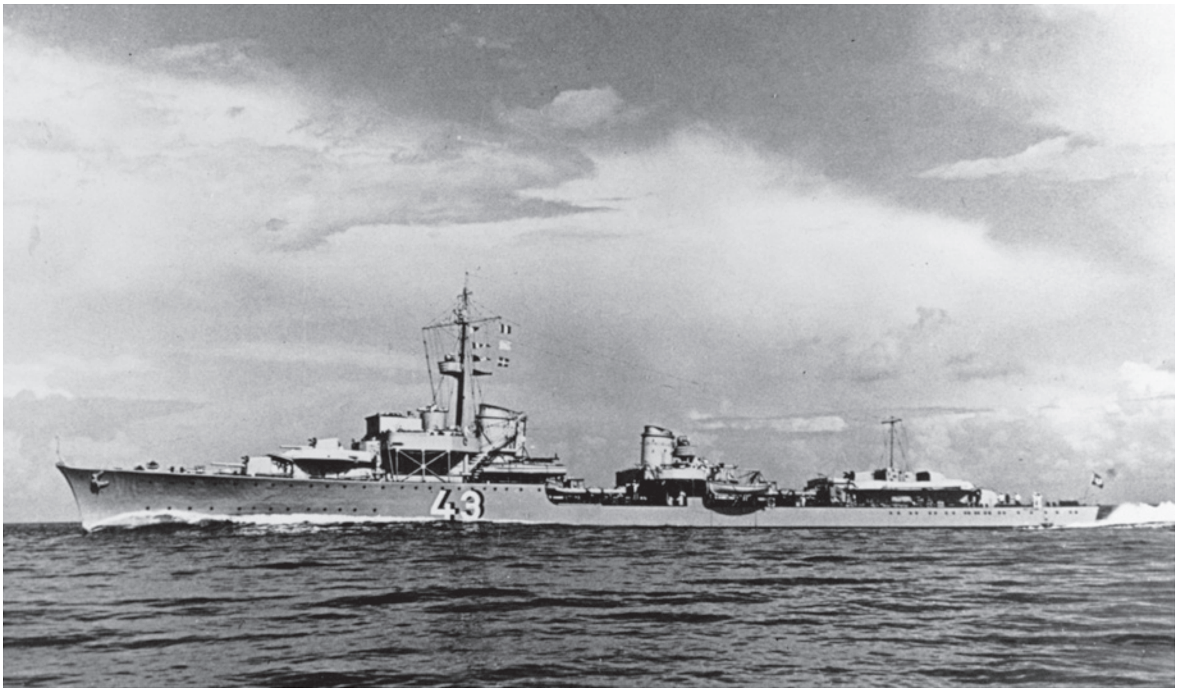
Z 11 BERND VON ARNIM



A Type 1934A destroyer, *Bernd von Arnim* was laid down in March 1935 and completed on 6 July 1938. Though they were slightly modified from the Type 1934 destroyers that preceded them, the Type 1934A ships did not rectify the main faults (poor seaworthiness and range, an overly heavy top-hamper) and suffered accordingly. *Bernd von Arnim* started the war in the Baltic, then moved on to the North Sea. During Operation *Weserübung*, the destroyer made its way to Narvik where together with *Georg Thiele* it fought engagements with *Hardy*, *Havock* and *Hunter* in the first battle, inflicting serious damage on the British ships. The second battle proved to be too much, however, lack of fuel and ammunition forcing *Bernd von Arnim* to beach in Rombaks Fjord and set demolition charges to destroy the ship. Of the 12 Type 1934A ships built, four were lost at Narvik; five survived the war.

outbreak of war there were two battlecruisers already built (*Scharnhorst* and *Gneisenau*), as well as three ‘pocket battleships’ (*Deutschland*, *Admiral Scheer* and *Admiral Graf Spee*), with two more capital ships (the battleships *Bismarck* and *Tirpitz*) still on the stocks; Britain had 15 as well as the three battlecruisers *Hood*, *Renown* and *Repulse* (with three more – the Courageous class – converted to aircraft carriers in the 1920s). The docks building Germany’s destroyers were busy with orders for other vessels and there were delays in obtaining the necessary machinery; this meant the Type 1934, Type 1934A and Type 1936 destroyers were completed late, with the first commissioned in January 1937 and the last in August 1939. Germany’s naval rebuilding programme was due to be completed by 1944, meaning the Kriegsmarine was not prepared for the war when it came.

The Deutsche Werke in Kiel built four Type 1934 ships (*Z 1–Z 4*), each with a standard displacement of 2,223 tons and a rounded edge to the forecastle deck. The short foredeck limited sea-keeping in rough seas and design weaknesses (such as poor



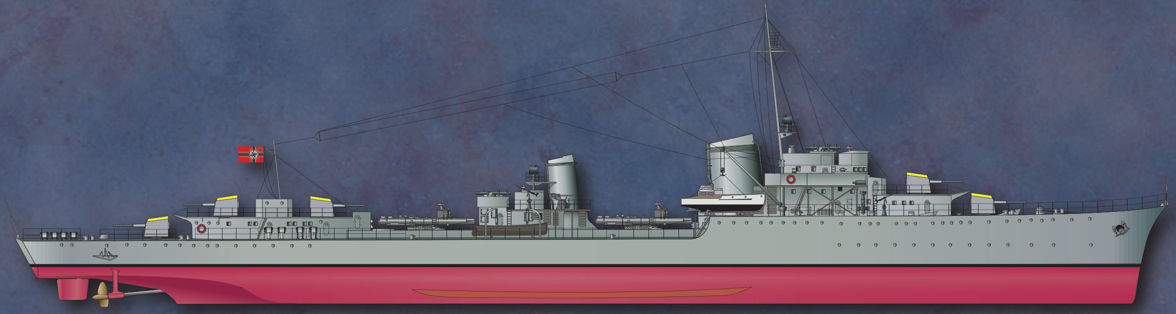
A fine profile shot of the Type 1936 destroyer *Z 21 Wilhelm Heidkamp* in 1938, likely undergoing sea trials soon after its launch. After the start of the war the ship spent some time on patrol and laying minefields, but Narvik was its first major engagement where it served as Kommodore Bonte's flagship. During the German flotilla's entrance to Vest Fjord on 9 April they encountered two Norwegian coastal-defence vessels, *Eidsvold* and *Norge*. The Norwegians refused to allow the Germans to pass and were preparing to fight when *Wilhelm Heidkamp*, only 330yd off *Eidsvold*'s port side, hit the Norwegian ship with three torpedoes, sending it to the bottom very quickly. *Wilhelm Heidkamp* would meet a similar fate the next day. (NH 83980 courtesy of the Naval History & Heritage Command)

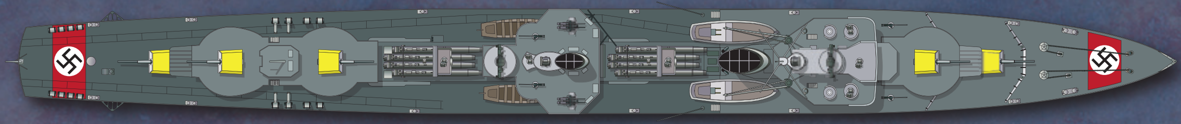
endurance and structural weaknesses) were discussed while the ships were being built. A modified bow characterized the new design, the Type 1934A, of which *Z 5–Z 8* were built at Deschimag (AG Weser) in Bremen, *Z 9–Z 13* at Germania Werft in Kiel and *Z 14–Z 16* at Blohm & Voss in Hamburg. A *Staukeil* – a 'wedge' fixed under the stern above the propellers, intended to deflect the propeller wash downward and keep the stern up at high speed – was removed on the Type 1934A ships as its presence meant the bow was too low and No. 1 gun could not fire.

Each of the Type 1934 and 1934A destroyers, named after a sailor who had died during World War I, had a large bridge and forward funnel, an after-funnel that was part of the superstructure, a spacious wheelhouse and chart room with all-electric steering, and an upper-bridge gun control. There were two motor boats (one either side of the forward funnel on the forecastle deck), a cutter, a dinghy, life-rafts and some Carley floats.

With less top weight because of their shorter funnels, the Type 1936 destroyers (*Z 17–Z 22*), built by Deschimag and named after commanding officers of torpedo boats killed during World War I, had better seagoing qualities. They had a higher beam, improved manoeuvring due to a reworked hull that increased deadwood astern, and circular decks for Nos 2, 3 and 4 guns that increased the working space for the crews. Operating routines for machinery were refined and there were fewer serviceability failures. Range was slightly greater because of the incorporation of larger fuel bunkers. All but *Z 20 Karl Galster*, being refitted, would be lost at Narvik. There were talks in 1937 about a destroyer capable of sortieing into the Atlantic that would have a range of 6,000 miles and six 12.7cm guns in twin mounts. This was refined to specify a range of 5,000 miles and 15cm guns, but was deferred in April 1938 when eight Type 1936A destroyers (that were of a new design) were ordered.

Z 22 ANTON SCHMITT





Laid down in 1938, *Anton Schmitt* was commissioned on 24 September 1939. The six Type 1936 ships were armed in the same fashion as the Type 1934 and Type 1934A ships, but were better designed, enjoying superior seagoing qualities and mechanical reliability. After the Type 1934 destroyer *Z 1 Leberecht Maass* was mistakenly bombed by the Luftwaffe on 22 February 1940, German destroyers began marking their decks with swastika emblems to identify them for friendly aircraft. After setting its troops ashore at the Ramnes Narrows on 9 April 1940, *Anton Schmitt* anchored in Narvik harbour. The following morning, *Anton Schmitt* was still at anchor as it took torpedo hits from *Hunter* and *Havock*, breaking in two. Of the Type 1936 ships, only one – *Z 20 Karl Galster* – would survive the war, all the rest being lost during the first and second battles of Narvik.

During trials, the Type 1934 destroyers revealed many deficiencies and were about to be assigned to training duties when war was declared. Excessive top weight made for poor stability as a lot of water was shipped. Stabilizer keels were fitted to replace the ineffective anti-roll device that comprised the flooding of two tanks amidships, and a bow-protection device was installed as well as a spray deflector between the anchor clew and front gun. The Type 1934 and Type 1934A destroyers were designed to achieve a range of 5,000 miles at 20kn and 7,000 miles at 17kn, but in reality those fitted with Benson boilers could cover only 1,530 miles at 19kn and those with Wagner boilers, 1,900 miles (Koop & Schmolke 2003: 26). Many engineers tried to spare the boilers by using lower pressures, but this increased the time required to change speed and reduced manoeuvrability. A gas turbine and diesel mixed system would have achieved ranges of 10,500 miles and speeds of 40kn, and a design with such an engine was suggested as the Type 1940 destroyer, but did not get further than the drawing board.

TECHNICAL SPECIFICATIONS

MOBILITY

BRITISH

The F, G-, H- and I-classes as well as the Tribals were fitted with three Admiralty three-drum boilers (one Johnson and two Admiralty boilers in *Hyperion*) that powered two Parsons geared turbines (Brown-Curtis turbines in *Fortune* and *Foxhound*), driving two shafts, generating 34,000hp for a maximum speed of 36kn (Konstam 2017a: 40); The K-class destroyers utilized two Admiralty boilers powering two Parsons geared turbines that drove two shafts, generating 40,000hp for a maximum speed of 36 knots (Konstam 2017b: 22).

The Admiralty three-drum boiler was the most common type of boiler system installed in destroyers. It consisted of a steam drum set over two water drums, the sides of the 'triangle' connected by water tubes and with a furnace set in the centre; heat was provided by oil burners that ran the length of the boiler. The Admiralty design was an evolution of the Babcock and Wilcox system and the Yarrow boiler, the first examples being installed in three A-class destroyers in 1927. Such water-tube boilers were lighter than previous iterations, more suitable for burning fuel-oil, and could raise steam more quickly as well; they could also sustain higher pressures, and gave a higher degree of superheat (Lavery 2006: 85). They worked by heating the water in the lower tanks which passed through the tubes into the steam tank above, thereafter passing through a series of smaller tubes, raising its temperature as well as its pressure (up to 250psi). The steam would then pass through into the

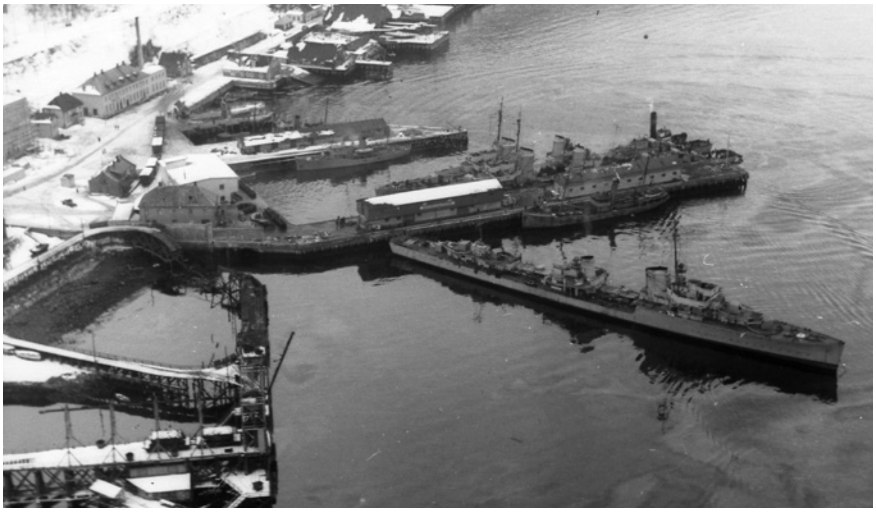
British destroyers at Narvik: basic specifications

Class	Displacement (standard)	Range	Armament	Present at Narvik
F class	1,350 tons	6,350nmi at 15kn	Four 4.7in Mk IX guns; two quad 21in torpedo tubes; two quad 0.5in Vickers anti-aircraft machine guns	*Forester*, *Foxhound*
G class	1,350 tons	5,530nmi at 15kn	Four 4.7in Mk IX guns; two pentad 21in torpedo tubes; two quad 0.5in Vickers anti-aircraft machine guns	*Glowworm*
H-class leader	1,455 tons	5,530nmi at 15kn	Five 4.7in Mk IX guns; two quad 21in torpedo tubes; two quad 0.5in Vickers anti-aircraft machine guns	*Hardy*
H class	1,350 tons	5,530nmi at 15kn	Four 4.7in Mk IX guns; two quad 21in torpedo tubes; two quad 0.5in Vickers anti-aircraft machine guns	*Havock*, *Hero*, *Hostile*, *Hotspur*, *Hunter*
I class	1,370 tons	5,500nmi at 15kn	Four 4.7in Mk IX guns; two pentad 21in torpedo tubes; two quad 0.5in Vickers anti-aircraft machine guns	*Icarus*
K class	1,350 tons	5,500nmi at 15kn	Three twin 4.7in Mk XII guns; two pentad 21in torpedo tubes; one quad 2-pdr 'pom-pom'; two quad 0.5in Vickers anti-aircraft machine guns	*Kimberley*
Tribal class	1,854 tons	5,700nmi at 15kn	Four twin 4.7in Mk XII guns; one quad 21in torpedo tubes; one quad 2-pdr 'pom-pom'; two quad 0.5in Vickers anti-aircraft machine guns	*Bedouin*, *Cossack*, *Eskimo*, *Punjabi*

A group of smiling boiler cleaners taking a short rest from their hard but vital work on the deck of a British destroyer, 1940. The F-, H-, I- and Tribal-class destroyers each employed three Admiralty three-drum boilers to generate power, running on fuel-oil, meaning that maintenance – which had to be carried out in port – was a difficult and dirty job. The Parsons single-reduction geared turbines were very reliable, but used steam of a lower pressure and temperature than many foreign contemporary designs, meaning they were less economical and less powerful than some of their competitors. The high speed of the turbines (several thousand revolutions per minute) needed to be brought down to a level where they could drive the propeller shafts (usually at less than 300rpm), necessitating complicated gearing systems to allow the turbine to mesh with the shaft. Royal Navy ships used a single-reduction gearing that reduced speed by a factor of up to 20:1, a process that required precise and extremely skilled engineering. Advances in turbine efficiency were particularly marked in the US Navy, which – due to better turbines and advances in boiler design as well as improvements in superheating and gearing – achieved notable improvements in output over the Royal Navy, especially in the early years of the war. (Lt S.J. Beadell/IWM via Getty Images) turbine, where it would power the reaction system (an invention of Charles Parsons, who gave his name to the turbine that used it); the turbine was a cylindrical housing inside of which were a series of rotors fitted with blades that alternated with blades fixed to the interior of the housing (Lavery 2006: 84). Maximum speed for all the classes that fought at Narvik was 36kn.

GERMAN

The Germans chose high-pressure, hot-steam boilers instead of a diesel engine in order to cope with rapid changes in speed. Two steam engines were supplied by a steam plant consisting of six high-pressure boilers in three boiler rooms. Blohm & Voss had obtained a licence to build British Benson high-pressure boilers (1,616psi at 950°F); these were tested at sea in 1935. Wagner boilers (1,029psi at 842°F) were also tested in 1936; neither boiler type was tested on destroyers and operational routines were delayed as a result, leading to serviceability issues with the Type 1934 and Type 1934A ships. The Wagner boiler fitted to all destroyers (except for *Z 9–Z 16*, which had Benson boilers) was particularly complex and required the intervention of engineers to ensure the machinery did not break down. In both types, poor circulation led to corrosion of the tubes and nozzles fitted to improve the situation became blocked, leading to further tube failures. The automatic control of combustion to regulate fuel quantity and air pressure was complex. Saake burners were driven by an air turbine that was driven by a steam turbine that also drove the fuel pump. Air joined fuel in a spinning cup that caused smoke during high speeds unless an excess-air setting was maintained. The feed water for the boilers was treated, but salt deposits were a problem; oxygen used for cleaning the boilers dissolved and also caused corrosion. The frequent tube failures that resulted were hard to replace because of the complex layout of the tubes. Boiler rooms with two boilers installed in each were cramped. The boilers were not divided and a hit in a boiler room would probably cause both to fail. The efficiency rate was only 77–78 per cent. Some of these problems were only discovered when the ships became operational and there was a board of



German destroyers, including *Z 17 Diether von Roeder* (in the foreground), pictured at Narvik after their difficult voyage north, April 1940. The seaworthiness and endurance of the Type 1934 and Type 1934A were deemed insufficient, and the Type 1936 was little improved. German destroyers were large and heavily armed, but boilers that powered the turbines frequently broke and led to long periods of repair. While boilers could and frequently did go out owing to burst pipes, repairing them while at sea could be achieved by turning them off, ventilating them with cold air and going in to patch over the hole. Other problems were more serious. For example, on 28 October 1939 the main feed pump on *Z 3 Max Schultz* was blocked and two boilers were deprived of water. Seawater got into the turbine, causing an explosion; water also poured in through a bilge-pump valve that remained open and came into contact with a switchboard, cutting electricity supply. The explosion had caused a disruption in feed water; pressure needed to work No. 2 boiler room fell, and the fire had to be turned off. The commander, Korvettenkapitän Claus Trampedach, stated that with none of its boilers working, his ship wallowed in the sea, incapable of movement and subject to extreme rolling motion. No. 3 boiler room recovered the situation and pressure was built up slowly to get *Max Schultz* moving again. The ship was in dock for weeks to repair the damage. (Bundesarchiv Bild 101I-758-0056-35 Foto: Ehlert, Max)

German destroyers at Narvik: basic specifications				
Class	**Displacement (standard)**	**Range**	**Armament**	**Present at Narvik**
Type 1934	2,223 tons	1,530nmi at 19kn	Five 12.7cm SK C/34 guns; two quadruple 53.3cm torpedo tubes; two twin 3.7cm SK C/30 guns; four single 2cm C/30 guns; two depth-charge racks, four throwers; 60 mines (optional)	*Z 2 Georg Thiele*
Type 1934A	2,171–2,270 tons	*Z 5–Z 8*: 1,900nmi at 19kn *Z 9–Z 16*: 1,530nmi at 19kn	Five 12.7cm SK C/34 guns; two quadruple 53.3cm torpedo tubes; two twin 3.7cm SK C/30 guns; four single 2cm C/30 guns; two depth-charge racks, four throwers; 60 mines (optional)	*Z 9 Wolfgang Zenker*; *Z 11 Bernd von Arnim*; *Z 12 Erich Giese*; *Z 13 Erich Koellner*
Type 1936	2,411 tons	2,050nmi at 19kn	Five 12.7cm SK C/34 guns; two quadruple 53.3cm torpedo tubes; two twin 3.7cm SK C/30 guns; four single 2cm C/30 guns; two depth-charge racks, four throwers; 60 mines (optional)	*Z 17 Diether von Roeder*; *Z 18 Hans Lüdemann*; *Z 19 Hermann Künne*; *Z 21 Wilhelm Heidkamp*; *Z 22 Anton Schmitt*

enquiry in 1939. A Seekriegsleitung memorandum in February 1941 would criticize the need for high steam pressure and temperatures and the inaccessible layout of the pipe work.

Auxiliary machinery was maintained by small turbines or electric motors that were also steam driven; this placed a high demand on the boilers, increasing fuel usage. There was also an electrical plant with five generators (two turbo generators, with one in each turbine room, and three diesel) with a total capacity of 738hp (805hp on the Type 1936 ships); these were relied upon when the boilers were off-line. All three classes were propelled by two shafts, each with three-bladed propellers, with direction managed by one rudder on the Type 1934 and Type 1934A and two on the Type 1936. Engine output for all three classes was 60,000–70,000hp. Maximum speed for the Type 1934 and Type 1934A was 38kn, rising to 38.5kn for the Type 1936. The Type 1934 and Type 1934A ships carried 740 tons of fuel (660 tons on *Z 9–Z 16* as they had Benson boilers), but 30 per cent of fuel had to be retained as ballast, thus reducing range. The Type 1936 ships carried 729 tons of fuel.

ARMAMENT

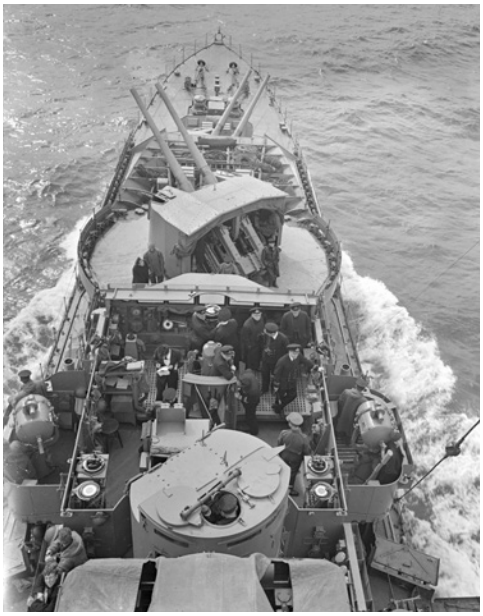
BRITISH

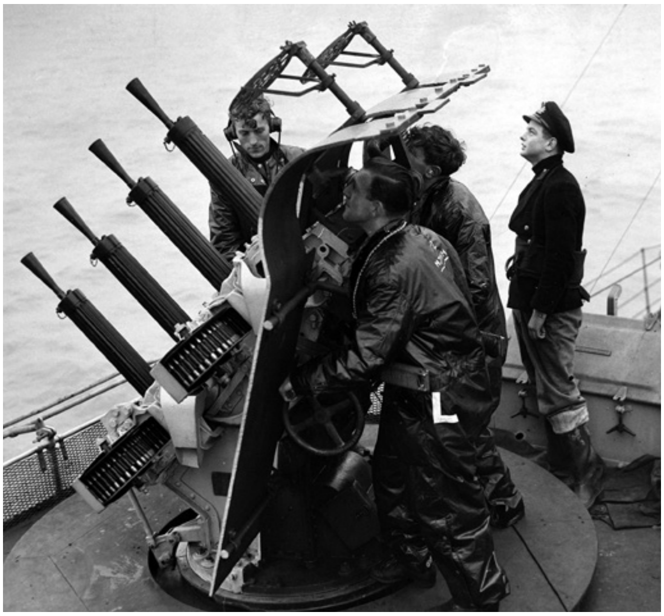
The main armament of all the A- through to I- class destroyers was the QF 4.7in Mk IX gun, while the J-, K-, N- and Tribal-class destroyers carried the QF 4.7in Mk XII gun, which was essentially the same as the Mk IX but adapted to work within a twin turret housing. The G-, H- and I-class ships present at Narvik all carried four Mk IX guns in single turrets with the exception of *Hardy*, which carried five. All were 'open' turrets, with the 0.125in-thick gun shield providing protection at the front and sides, while the rear was open. Each turret was set on a CP (Central Pivot) Mk XVIII gun mounting that had an elevation of +40°/-10°; this was adequate for ship-to-ship combat and of some use in long-range anti-aircraft defence, but inadequate when dealing with high-angle air attacks and dive-bombers. The Mk IX guns had a hand-worked action, and were capable of firing 7–10rd/min. The Mk XII twin gun turrets were set on CP Mk XIX gun mountings and enjoyed power ramming, elevation and traverse, which allowed the turrets to train at a rate of 10°/sec; the rate of fire was one round every 5 seconds, or 12rd/min.

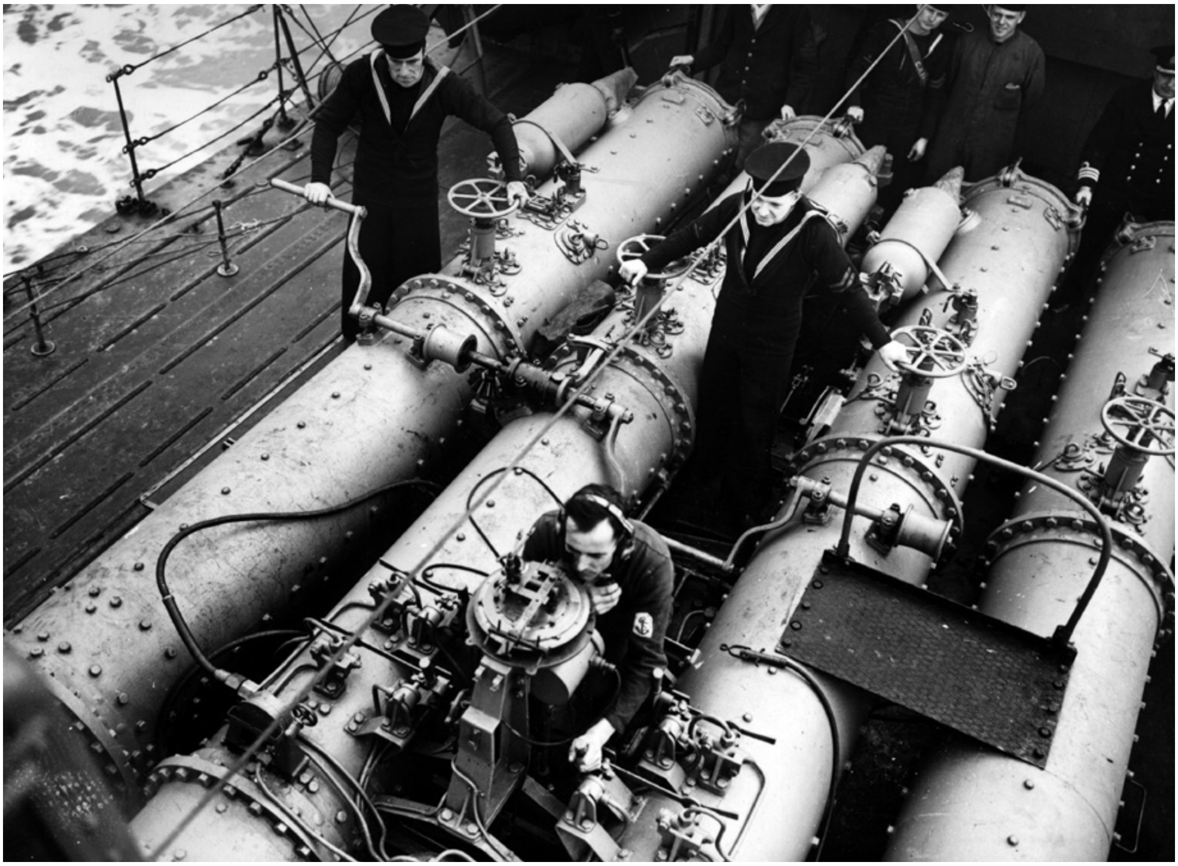
Anti-aircraft capability was quickly found to be wanting among all classes of British destroyers. The ships at Narvik all carried two 0.5in Vickers MG Mk III quadruple guns, which were underpowered and too short-ranged to be of much significant use. Their relatively low rate of fire (150–200rd/min) was a problem, because when engaging fast-moving aerial targets it was necessary to lay down a large volume of fire to maximize the chances of scoring a hit. The relatively light .50-calibre bullet was also too small to guarantee effective damage if and when it did hit. The 0.5in Vickers guns could be augmented by four .303in Lewis guns set around the bridge, but the small calibre, the relatively low rate of fire (500–600rd/min) and the use of 47-round pan magazines meant that their effectiveness was modest at best.

BELOW LEFT
A pair of 4.7in Mk XII guns mounted in twin turrets on the destroyer *Kelvin*, September 1940. The 15in-long projectile was either High Explosive (HE) or Semi-Armour Piercing (SAP); the brass casing was 31in long. The 4.7in shell had a maximum range of 16,970yd at 40°. Though smaller than the German 12.7cm SK C/34 gun, the Mk IX and Mk XII proved more than adequate, the smaller British calibre proving itself quite effective during the close-range gunnery duels at Narvik. (Lt C.J. Ware/IWM via Getty Images)

BELOW RIGHT
Gunners on a British destroyer man their 0.5in Vickers quadruple anti-aircraft gun (this example equipped with a gun shield) while escorting an Atlantic convoy, December 1941. The quad Vickers would gradually be replaced by the much more effective Oerlikon cannon from 1942 onwards. (Popperfoto/Getty Images)







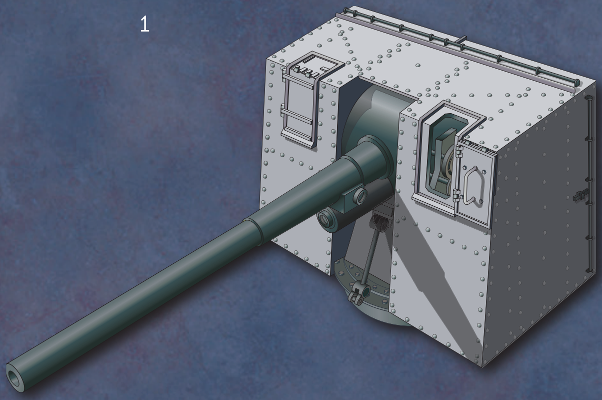
Here, sailors crew a set of four torpedo tubes mounted in a QR (Quadruple Revolving) launcher on an unidentified destroyer on patrol in the English Channel, 1940. Though a few British destroyers had torpedo tubes mounted in threes (for example, V- and W-class ships), the F- and H-class ships were equipped with a pair of QR torpedo tubes; *Glowworm* and *Icarus* each had a pair of PR (Pentad Revolving) torpedo tubes, while the Tribals had a single set of QR tubes, though they were power-trained to allow them to be brought into action faster. A destroyer's full complement of torpedoes was contained within its tubes, no ships carrying any reloads with them. (Central Press/Getty Images)

The Tribal-class ships' anti-aircraft defences were augmented by the QF 2-pdr Mk VII* four-barrelled 'pom-pom' set amidships. The guns fired two barrels at a time in a 'controlled' system (essentially a hand-cranked semi-automatic method of firing that ensured the guns were kept synchronized), with a rate of fire of 96–98rd/min. They had a tendency to jam, but they were still the most effective anti-aircraft system on any British destroyer at this time. The maximum speed of the 'pom-pom' when being manoeuvred by hand was 7½°/sec elevation and train; ammunition feed boxes held 112 rounds for each of the guns in the quadruple mountings, the high-velocity HE or tracer shells having a maximum range of 5,000yd, a ceiling of 13,300ft and an effective range of 1,700yd. Each gun needed a crew of eight: gun captain, gun layer, trainer, crank-turner and four ammunition loaders (feeding additional 14-round belts into the guns to keep them firing).

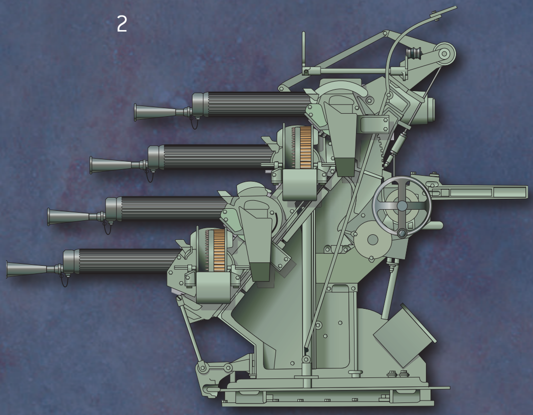
The pre-war and early-war classes of British destroyers all used the Mk IX*/Mk IX** torpedo; the Mk IX** had a range of 11,000yd at 41kn and 15,000yd at 35kn. Though all British destroyers of the period were capable of carrying depth charges, not all did, many being fitted with the TSDS mine-clearing system on the quarterdeck instead of a depth-charge rail. In 1940, the Tribals all carried depth charges in a short trap-and-rails system designed to drop them over the stern; the charges carried were the Mk VII, weighing 420lb with settings to detonate according to hydrostatic pressure down to a maximum of 300ft.

BRITISH DESTROYER ARMAMENT

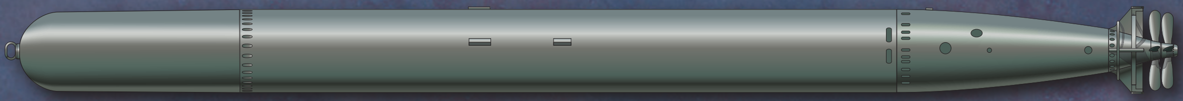
1



2



3



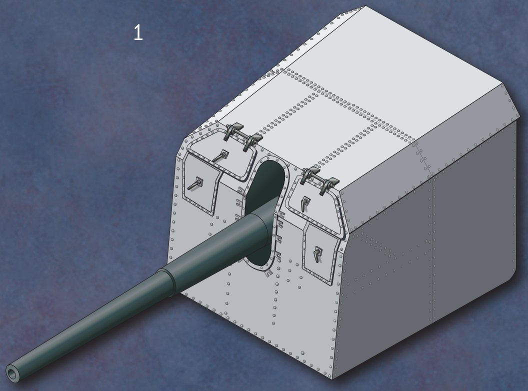
The main armament for British destroyers in September 1939 was the reliable and effective QF 4.7in Mk IX gun (**1**). The Tribals' Mk XII gun was essentially the same as the Mk IX, but adapted to allow it to be mounted in a twin turret. 18ft 4in long, the Mk IX gun fired a 50lb projectile out to a maximum range of 16,970yd; ammunition consisted of a separate charge and projectile, the shells carried being either HE (High Explosive) or SAP (Semi-Armour Piercing), the latter being capable of penetrating 2.5in of armour at 6,500yd. On F- and G-class ships the Mk IX gun was fitted to a CP (Central Pivot) Mk XVII gun mounting that had portable deck plates which could be removed to allow +40° of elevation for long-range anti-aircraft defence, while the H- and I-class ships used a CP Mk XVIII gun mounting that allowed the same level of elevation but without the need to adjust the decking. The Tribals, with twin gun turrets, used the CP Mk XIX gun mounting that allowed for powered ramming.

In terms of anti-aircraft defences, the Tribals had the benefit of a quad 'pom-pom' amidships together with two 0.5in Vickers MG Mk III quadruple guns (**2**), but for the F-, G-, H- and I-class destroyers their two quad Vickers Mk IIIs provided almost the entirety of their anti-aircraft weaponry, supplemented only by pintle-mounted .303in Lewis guns. The Mk III's four guns were each fed by 200-round ammunition drums (enough for two 10-second bursts); the underpowered cartridge entailed a rather short effective range of 800yd (theoretical maximum range was 5,000yd). Deployed with or without gun shields, they remained a common sight on British ships for much of the war, only slowly being replaced with the much more effective 20mm/70 (0.79in) Mk I/Mk II Oerlikon cannon.

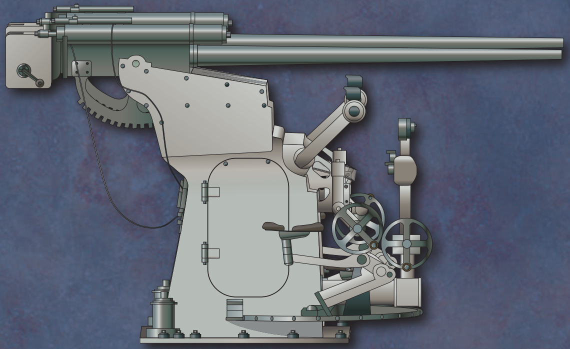
In 1939, Royal Navy torpedoes employed a burner-cycle engine (similar in operation to a diesel-engine system) that could generate 264hp for a speed of up to 41kn in a 21in Mk IX** torpedo. Entering service in 1930, the Mk IX (**3**) – and its later developments, the Mk IX* and Mk IX** – equipped nearly all British early-war destroyer classes; 23ft 10.5in long with a diameter of 21in, it weighed 3,732lb, including a 740lb TNT warhead, replaced from 1943 onwards for the Mk IX** by 805lb of Torpex. The Mk IX had a maximum range of 13,500yd at 30kn, the Mk IX* 14,000yd at 30kn, and the Mk IX** 15,000yd at 35kn. Torpedoes were mounted in two sets of deck-mounted launchers (only one set in the case of the Tribals); H-class ships were fitted with QR (Quadruple Revolving) Mk VIII* tubes, while the I-class ships were fitted with PR (Pentad Revolving) Mk I tubes, and Tribals had a QR Mk IX (upgraded early in the war to Mk IX*) set.

GERMAN DESTROYER ARMAMENT

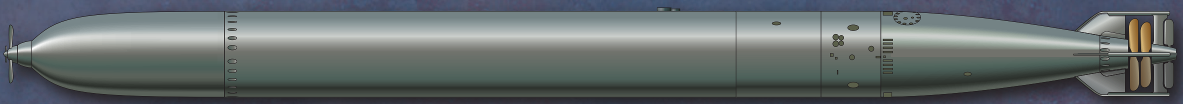
1



2



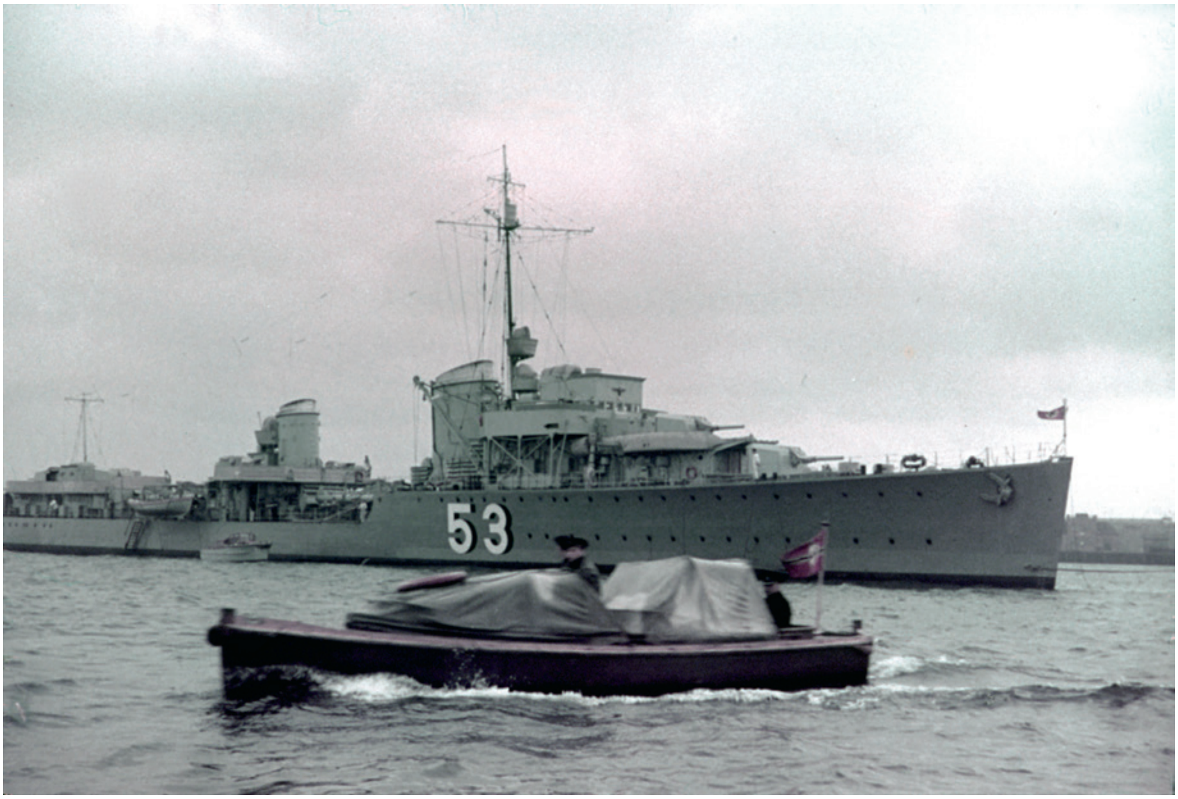
3



All German pre-war destroyers had the 12.7cm (5in) SK C/34 gun (**1**), with Type 1934, Type 1934A and Type 1936 ships each mounting five guns in individual turrets. Introduced in 1934, the gun weighed 3.59 tons and was 18ft 11in long. Utilizing a separate casing and shell, it fired a 62lb high-explosive projectile out to a maximum range of 19,030yd at its maximum 30° elevation. Though rates of fire were supposed to be around 18–20rd/min when the gun was operated by well-trained men in ideal conditions, the open gun housing meant that environmental factors such as those at Narvik would most likely have severely reduced the ability of the gun crews even before the effects of enemy action were factored in. The 120 rounds in each of the four magazines were brought up on electric hoists; after firing 1,950 rounds the gun barrel would need replacing.

All the German ships carried four 2cm (0.79in) C/30 guns to defend against aerial attack, but the main weapon employed for long-range anti-aircraft action was the 3.7cm (1.5in) SK C/30 (**2**), a single-shot semi-automatic gun which all the destroyers present at Narvik carried on the twin triaxial Dopp LC/30 mount, of which each ship had two pairs. The 3.7cm SK C/30 was the Kriegsmarine's only anti-aircraft gun above 20mm in the early years of the war. With a barrel length of 10ft 1in, the 3.7cm SK C/30 fired a 1.65lb high-explosive tracer or armour-piercing shell at 3,280ft/sec out to 9,295yd; at maximum elevation – 85° – the range dropped to 7,435yd. The gun could be fired at targets 22,310ft in the air, at a practical rate of fire of 80rd/min (theoretically 160rd/min); its inability to fire automatically meant that it was soon superseded by more advanced designs such as the 40mm Bofors as well as a number of domestically produced Flak platforms.

The standard torpedo used by the Kriegsmarine destroyers present at Narvik was the 53.3cm (21in) G7a T1 (**3**). Each ship carried 12, four reloads and eight in two quadruple launchers that were more flexible than their British counterparts, being able to launch their 'fish' at a range of angles, not just fixed at 90°. The G7a T1 was 23ft 7in long, weighed 1.50 tons and carried a 300kg (661lb) warhead; it was powered by a wet-heater compressed-air system and had a range of 6,560yd at 44kn and up to 15,310yd at 30kn. Though a generally well-designed weapon, the G7a T1 was plagued with problems during the early years of the war due to some severe flaws in relation to depth keeping and both the magnetic and impact pistols upon which the torpedo relied to be effective, the outcome at Narvik arguably being due in no small part to the very poor performance of German torpedoes in finding their targets.

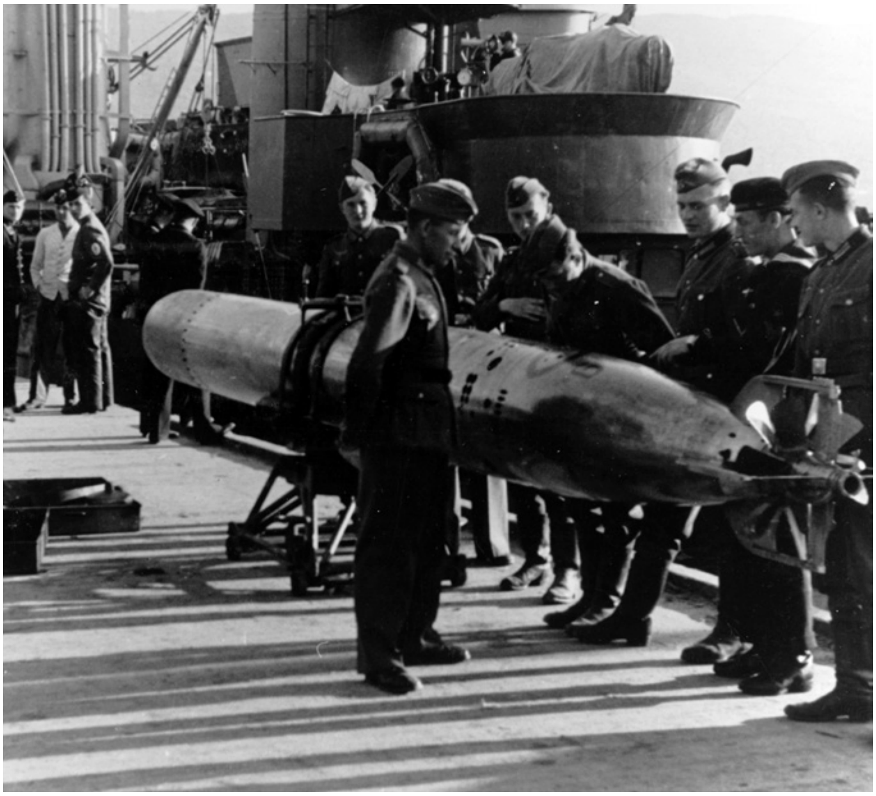


The Type 1936 destroyer *Z 18 Hans Lüdemann* in Kiel harbour, 1938. All the German destroyers at Narvik had the same main armament of five 12.7cm single guns and two sets of quadruple torpedo tubes, which made them powerful but top-heavy. Five of the six Type 1936 destroyers – *Diether von Roeder*, *Hans Lüdemann*, *Hermann Künne*, *Wilhelm Heidkamp* and *Anton Schmitt* – would be lost at Narvik, with only *Karl Galster* surviving the war. (Sobotta/ullstein bild via Getty Images)

GERMAN

German destroyers at Narvik were all equipped with the 12.7cm (5in) SK C/34 gun, housed in five single turrets on a C/34 centre pivot mounting, with two forward and three aft. The gun barrel could be elevated to 30°. No. 1 and No. 2 guns could fire 145° either side; No. 3 gun was restricted to an arc of 30–150°, and No. 4 and No. 5 guns to 60° ahead of beam. An upper-bridge gun-control system comprised a stabilized binocular master sight on a plinth crewed by a layer, trainer and officer plus an optical stereoscope rangefinder stabilized for pitch and roll and crewed by a layer, trainer and range reader. Another rangefinder was located on the aft deck house. Radar sets were not installed until 1941. Fire control was conducted with a Type C34/2 computer. To obtain a firing solution there were dials for one's own ship, the enemy ship and wind, and others for the movement of the ship the gun was firing from. A separate panel for range plots and target position was used.

There were also eight 3.7cm (1.5in) SK C/30 anti-aircraft guns on C/30 twin mounts either side on the amidships structure and four single pedestal-mounted 2cm (0.79in) C/30 anti-aircraft guns on C/30 single mounts situated on a small deck house. The 3.7cm gun had a vertical sliding-block breech mechanism. Clips of eight rounds were used; 8,000 rounds were carried in two magazines. The weapon was housed in a cradle that was designed to compensate for pitch and roll, but the gyros were too weak to be effective. The 2cm anti-aircraft gun was capable of firing at surface targets 5,360yd away and at aerial targets 12,140ft away; the practical rate of fire was 120rd/min (280rd/min theoretical). The magazine carried 20 rounds, but the



Torpedoes are loaded onto an unidentified German destroyer. The G7a torpedo had a 948lb warhead that could be detonated by a contact or magnetic pistol and was capable of speeds of 30kn, 40kn or 45kn at ranges of 16,405yd, 5,470yd and 4,375yd, respectively. Unlike the electrically driven G7e torpedo carried by U-boats, the G7a's torpedo track was visible. The G7a was different from the G7e torpedoes used on submarines: the G7e was electrically powered, while the surface models were Decalin-fuelled and wet-heater driven – it was thought that the impact of a ship-launched torpedo hitting the water would damage an electrically powered weapon's batteries. In total, 12 G7a torpedoes were carried, with four spares stored in covered compartments alongside the loaded tubes. In action, reloading would prove to be too hazardous and would not be attempted. There were issues with the detonating pistols (the magnetic version was compromised by the earth's magnetic field) and depth control that were particularly realized at Narvik and would lead to a board of enquiry. (NH 71442 courtesy of the Naval History & Heritage Command)

breech mechanism often malfunctioned; 3,000 rounds were carried per barrel, each of which could be used as a single, twin- or quadruple-mounted weapon. A 1.25m rangefinder was used for the 3.7cm anti-aircraft gun and a portable 70cm rangefinder for the 2cm anti-aircraft gun.

All German destroyers were fitted with two quadruple torpedo-tube banks either side of the aft funnel. The torpedo tubes were remote-power operated or could be trained under local power. They could be fired at 30–150° when the ship was moving at speeds up to 28kn, or 45–135° above 28kn. Torpedoes were of the G7a compressed-air type; running depth was set in 1m (3ft 3in) increments up to 57yd. Before firing, a gyro could be angled in one-degree increments to make the torpedo run up to 90° either side. The torpedo officer was stationed on the bridge and could estimate the speed and angle of the target, but could also use the data provided by the 12.7cm guns' fire-control computer.

Four depth-charge throwers were placed two either side of the aft superstructure and there were two depth-charge racks, each with three charges, on the quarters. Approximately 18 depth charges were carried. There was no Asdic installed on German destroyers until after the encounters at Narvik, so hydrophones were used instead. Mines (up to 70) were also carried; two types were used. The EMC, a moored mine that had a 300kg (661lb) explosive charge designed to be set at a depth of between 3m (9ft 10in) and 6m (19ft 8in), detonated on contact with a vessel. The EMF was a magnetic mine that would be set at 15m (49ft 3in) depth and had 350kg (772lb) of explosives that went off when a ship passed by.

The British destroyer *Faulkner* lays down a smokescreen during an Arctic convoy to the Soviet Union, *c*.1942. Visibility was a crucial factor in successful engagements, and a ship's ability to 'make smoke' was often an effective countermeasure to an enemy's gunfire, allowing an attacking force to screen its movements and damaged ships to retreat under cover, but the increasing availability of radar would negate such advantages. (Haynes Archive/Popperfoto/Getty Images)

PROTECTION

BRITISH

Given Britain's worldwide commitments, Royal Navy destroyers had to be able to adapt to a wide range of roles and environments. Both escort destroyers and their fleet counterparts were balancing-acts of speed, manoeuvrability, seaworthiness and armament. It was believed that adding plate steel to destroyer hulls would degrade both speed and manoeuvring capability, two of a destroyer's most important abilities. Also, destroyers were not expected to engage more heavily armed vessels, and even in combat with ships carrying comparable weaponry (as at Narvik), the amount of armour necessary to allow anything more than token protection against the medium-calibre guns that made up a destroyer's main or a cruiser's secondary armament was entirely impractical. With torpedoes, the case for evasion over armour was all the more obvious, as even the heaviest ships were vulnerable to as little as a single torpedo hit. The bridges, wheelhouses and plotting offices were protected by bulletproof plate and the gun crews enjoyed a modest degree of protection (either in the form of a simple gun shield on the 0.5in quad Vickers or the open-backed armoured housings – 0.125in thick – on the 4.7in gun turrets), but this was only effective against small-calibre projectiles or shell splinters. Instead, destroyers were expected to rely on their speed and manoeuvrability to ensure they held favourable tactical positions when engaging an enemy. This approach included the use of zigzagging to throw off an attacker's gun plotting, smokescreens generated by the engines and pumped out of the smokestacks to obscure the destroyer from view, and camouflage patterns to obscure the exact type and range of the ship from the enemy (this last method not being employed by the British ships at Narvik).

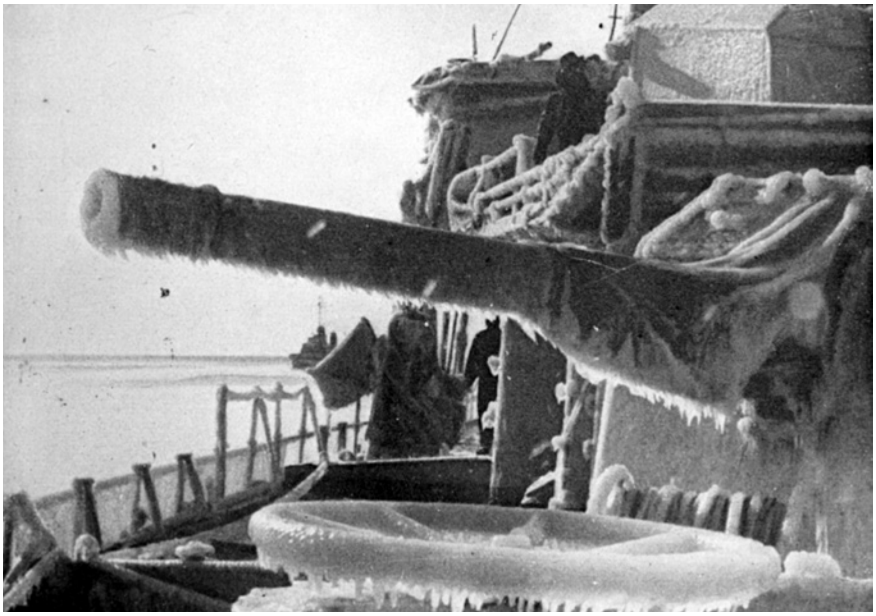
All the British destroyers that fought at Narvik were fitted with Asdic; the Type 132 sets installed in destroyers could detect a submarine 2,500yd away, though it could not give readings as to depth. K- and Tribal-class destroyers were also fitted with radio direction finders (HF/DF) on their mainmasts.

GERMAN

German destroyers were essentially unarmoured, with the exception of light protection around the bridge and the ships' weapons systems. The main 12.7cm armament was housed in turrets with 0.3in-thick plate steel that was designed to protect against shrapnel and splinters, but nothing more substantial than that. All later mountings of the 3.7cm anti-aircraft guns had a 0.3in-thick gun shield, but on all the destroyers at Narvik the guns were unprotected.

Much like the British ships, German destroyers relied on their manoeuvrability to avoid taking hits, a course of action that had a degree of success at Narvik: during the second battle no German ships took hits from British destroyer gunfire from ranges greater than 5,000yd, in part because the German ships were engaged in constant zig-zagging, something they were able to do because they had sea room whereas the British on their approach through the Ramnes Narrows did not. Movement was also the best protection against torpedo hits: all the German destroyers that were struck by British torpedoes were stationary for one reason or another.

German tactics were also more cautious and defensively minded, especially with the ships sent to Narvik due to their specific orders to conserve their force and return to Germany (shown, for example, by the actions of Fregattenkapitän Erich Bey and his three ships during the first battle in threatening Warburton-Lee's retreating force, but not driving an attack home). This defensive mentality was also evident in the disposition of the German destroyer force, with the ships dispersed between the main harbour and neighbouring fjords prior to the first battle (a tactic Bey hoped to duplicate for the second battle, but his ships were slow moving into position due to mechanical issues and the damage some ships had endured in the earlier battle).



The harsh environment encountered by the German battle groups as they made their way north proved challenging, and quickly uncovered shortcomings in the design of the destroyers with regard to their reliability and seaworthiness. At 1800hrs on 7 April 1940, the wind that blew from the south-west increased to Force 6 and then to Force 7 during the night. En route to Narvik, the German destroyers yawed badly and were difficult to hold on course. Equipment was lost overboard and depth charges broke loose and detonated off the side. On *Georg Thiele*, the port-side cooling-water pump failed and the ship struggled on its starboard engine as the crew attempted repairs. On *Wilhelm Heidkamp*, cascading water put out a boiler and shorted the electrics; the boiler was relit in the dark. The ships were supposed to maintain 26kn, but this was not achievable for most and they struggled to keep together. Many lost their station and were told only to close up at first light the next day. The destroyer *Erich Koellner* is shown here contending with Arctic weather. (Bundesarchiv Bild 134-C0523 Foto: o. Ang)

THE COMBATANTS

OPPOSITE
A raft of bedraggled and fuel-oil-choked survivors from *Glowworm* are rescued by *Admiral Hipper* on the morning of 8 April 1940, the crew of which pulled 40 men to safety, though several later died of their wounds; *Glowworm*'s captain, Lieutenant Commander Gerard Roope, and the majority of the crew were lost. Service aboard destroyers was popular, but the risks were considerable considering the scope of such ships' duties. If the ship went down survival would depend on the nature of the damage sustained, how fast it went under, the temperature of the sea and the proximity of other ships (either allied or enemy) that could offer assistance. The boilermen and engineers, working in the bowels of the ship, were particularly vulnerable in rapid sinkings or torpedo impacts, a fact reflected in the difficulty the Royal Navy had in replacing the loss of increasing numbers of such skilled men as the war progressed. (The Print Collector/Getty Images)

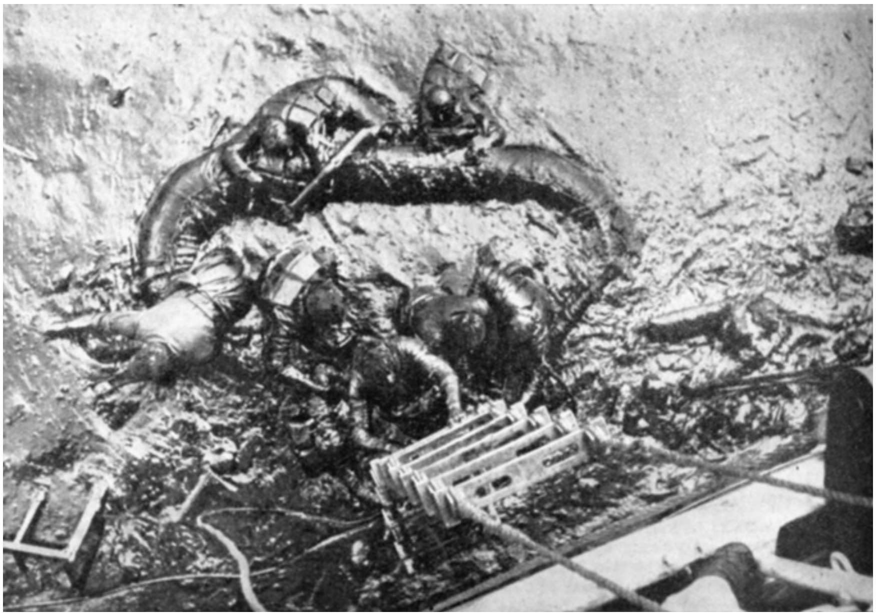
PERSONNEL

BRITISH

By September 1939 there were 119,000 men in the Royal Navy with a further 12,000 in the Royal Marines. In the event of war manpower could be augmented by the Royal Fleet Reserve (RFR), the Royal Naval Reserve (RNR) and the Royal Naval Volunteer Reserve (RNVR). The RFR was made up of ex-ratings and officers who were retired members of the regular service. Though some would be too old for service at sea and others would lack knowledge of the most current weapons and radar systems, they were still suitable for shore service, freeing up much-needed personnel for other duties; 55,000 such men were called back for service at the start of the war. The RNR consisted of professional seamen drawn from the Merchant Navy and the fishing fleets who had some experience training with the Royal Navy both in shore establishments and at sea, though the dire need for those men to remain with their original services as the war progressed would limit their availability; 1,641 officers and 8,397 ratings were taken into the Royal Navy in 1939. The RNVR was a civilian naval reserve made up of amateur seamen, with a separate register for yachtsmen available in case of emergency known as the Supplementary Reserve; the volunteers received training at the major ports, and provided 809 officers and 5,371 ratings at the outbreak of the war (Lavery 2006: 8). Ongoing recruitment for the regular service was strong and came from both volunteers – known as CS or 'Continuous Service' men, who had signed up for the standard 12-year period of enlistment – and the new drafts of HO or 'Hostilities Only' conscripts, men whose service would only last for the duration of the war and a reasonable time after its conclusion to allow for an orderly demobilization. The Royal Navy did not take unwilling conscripts, only accepting 'HO' men who had expressed a preference for service in the Royal Navy at the time they were called up, which they did in far greater numbers than the service could actually absorb.

At the time of the Narvik campaign, destroyers were officered by men of the regular service, though there would be increasing numbers of RNVR personnel included as the war progressed (especially in escort destroyers). Officers would specialize in a particular branch of service, including Gunnery, Torpedo (which included a whole range of electrical systems aboard ship), Asdic, Communications, Radar, Navigation and Engineering. After the outbreak of war the 'catch-all' Torpedo branch quickly had to refine its practices, making a distinction between actual torpedomen and the rest, who were basically electricians. The Engineering branch relied on the engine-room artificers, highly skilled men who had served four-year-long apprenticeships (either inside or outside the Royal Navy), and who would be made petty officers soon after qualification (Lavery 2011: 108). Artificers were supplemented by mechanicians, who were recruited from the ranks of the leading stokers and underwent two years of training, often specializing in fitting, boilermaking, machining and such like. Stokers were responsible for the running and basic maintenance of a ship's boilers and engines.

Sailors line up for their tot of rum on an unidentified Royal Navy destroyer, 1940. The practice of issuing a daily ration of ⅛ pint of rum (not abolished until 31 July 1970 – 'Black Tot Day') was an integral part of the culture on board ships and throughout the Royal Navy in general, and was particularly welcome on patrols in the north Atlantic and Arctic oceans. (Popperfoto/Getty Images)



BRITISH DESTROYER OFFICERS

BERNARD WARBURTON-LEE

Born on 13 September 1895 at Broad Oak in north Wales, Bernard Warburton-Lee came from a family with no previous connection to the sea. Having decided upon a Royal Navy career he attended Dartmouth Royal Naval College in 1910, subsequently joining the light cruiser *Hyacinth* as a midshipman in 1913. During World War I he served on a torpedo boat as well as several destroyers, being Mentioned in Despatches. He was given command of his own destroyer, *Tuscan*, in November 1924, soon afterwards gaining the rank of lieutenant commander, his career progressing smoothly with postings to the Mediterranean fleet bracketing his time on a staff course at the Royal Naval College in Greenwich.

Warburton-Lee was given command of the destroyer *Hardy* and the flotilla of eight H-class ships on 28 July 1939, where his personal fastidiousness and regime of discipline and physical fitness were extended to his crew. Leading a detachment of his flotilla in the Norwegian campaign in 1940, Warburton-Lee had to decide whether to advance on Narvik and hopefully engage an enemy of unknown strength without the support of any cruisers or capital ships. His decision to risk an attack was bold in the face of a host of potentially disastrous variables, but it was the sort of boldness that was expected of destroyer captains; and despite the losses suffered during the first battle – including Warburton-Lee and his ship – the damage inflicted on the German forces and merchantmen was considerable. His final signal was 'Keep on engaging enemy'.

PETER GRETTON

Born on 27 August 1912 at Dalhousie, India, Peter Gretton attended Dartmouth and Greenwich Royal Naval colleges, where he excelled academically. He was assigned to the battlecruiser *Renown* in 1930 and then served in the Mediterranean and the West Indies, including at Haifa in Palestine during the Arab uprising in 1936 in which he led a platoon of seamen in street-fighting that earned him the Distinguished Service Cross. He then served as an instructor at the Royal Naval College, going back to sea in 1939 on the east-coast convoys.

In April 1940 Gretton became first lieutenant in the destroyer *Cossack*, just before the action at Narvik; *Cossack*, captained by Commander Robert Sherbrooke during the battle, was heavily engaged in an attack on the harbour that saw the destroyer grounded after taking multiple hits, though the ship continued to fire on land targets and other ships anchored nearby – Gretton was Mentioned in Despatches for his efforts during the battle. The following year he moved into escort destroyers, where he would win three Distinguished Service Orders and the Order of the British Empire for his actions against enemy U-boats, going on to command Escort Group B7 in the destroyer *Duncan*. In 1962 he became Deputy Chief of Naval Staff and Fifth Sea Lord, being knighted in 1963, when health issues forced his retirement. After his naval career he became bursar of University College, Oxford and an author, publishing books on his war experiences and naval strategy. He died on 11 November 1992.

Branches would induct new recruits after their basic training and would begin the process of educating them in their new responsibilities, though the methods for doing so varied widely. Seamen would also usually specialize in a branch, though routes to entry were often different; an officer wishing to join the Gunnery branch could do so after his basic training, undergoing a short course in his new area followed by a year-long posting for more advanced education at HMS *Excellent* in Portsmouth, while a seaman would be expected to have some service at sea as well as his captain's recommendation before selection to attend gunnery school. For ratings, Gunnery was divided into four sub-groups: quarters, who would operate the guns; layers, who would direct, train and lay the guns; the control section, who would operate rangefinders and inclinometers that would measure the angle and course of a target; and the anti-aircraft section, whose role would expand significantly as the war progressed (Lavery 2012: 43).

GERMAN DESTROYER OFFICERS

FRIEDRICH BONTE

Born on 19 October 1896, Friedrich Bonte joined the Kaiserliche Marine in 1914. Dismissed at the end of World War I, he volunteered for the Freikorps to oppose the Soviet republic established in Bavaria. He joined the Reichsmarine in 1920 and was a *Korvettenkapitän* by 1933. In 1938 he was appointed commander of 2. Zerstörer-Flottille and in October 1939 was made *Führer der Zerstorer* ('destroyer leader' – commander of the entire German destroyer fleet); he held the rank of *Kapitän zur See.* Oberleutnant zur See Albert Bach, an officer on *Wilhelm Heidkamp*, recalled Bonte's calm and optimistic demeanour, while Oberleutnant zur See Karl-Theodor Raeder (the son of Großadmiral Erich Raeder), who served on *Erich Giese*, stated that Bonte was a respected and determined officer (Cope 2018: 116).

Although Bonte did not survive the first battle of Narvik and played little direct part in the battle itself, his decisions account for the vulnerable dispositions of his ships. On 10 April, Bonte underestimated the likelihood of a British surprise attack. With three destroyers refuelled, Bonte could have maintained a continuous patrol. He could have positioned lookouts with radios at the Ramnes Narrows, but instead relied upon his U-boats (he referred to them as offering outstanding protection) to deter the British commanders from making a counter-attack and to sight British ships if they did approach. He wanted to ensure most of his men had an opportunity for a decent rest prior to their journey home and therefore had only a single ship on patrol.

KARL SMIDT

Born on 30 August 1903, Karl Smidt joined the Reichsmarine in March 1922 as a midshipman and went on to hold numerous appointments including service on the light cruiser *Karlsruhe*. In 1936, with the rank *Kapitänleutnant*, Smidt was made commander of the torpedo boat *Jaguar* operating off the coast of Spain during that country's civil war, where his ship helped evacuate German citizens from the war zone, relocating them to nearby French ports. In 1939 he assumed command of the destroyer *Erich Giese*. He was not a supporter of the Nazi Party, in 1935 joining the *Bekennende Kirche* (the 'Confessing Church'), an organization which fought for ecclesiastical independence by opposing the Nazi regime's overt attempts to subsume the Protestant establishment within its own ideology.

At the second battle of Narvik, Smidt's ship did not at first move out of the harbour, because of issues with *Erich Giese*'s boilers. With the British destroyers closing in on the harbour, Smidt decided to make a foray – a decision that would wreck his ship. He survived the battle and would be given command of *Z 27* in 1941; the following year he was promoted *Fregattenkapitän* and joined the naval staff in Wilhelmshaven. In 1943 he was promoted *Kapitän zur See*. After the war he became a civil servant and then in 1956 joined the Bundesmarine. He was promoted *Kommodore* and then *Konteradmiral*; with this rank he commanded the NATO German naval forces in the Baltic and North Seas. He died on 11 January 1984.

GERMAN

The Versailles Treaty of 1919 restricted the Reichsmarine to 15,000 personnel and the number of officers and specialist deck officers to 1,500. NCOs signed on for only 12 years. From November 1932 another 1,450 lower ratings were recruited and expansion gathered pace, but there were difficulties in growing the Kriegsmarine from such a low base. There was a shortage of officers, and warrant officers had to be commissioned, which in turn caused a shortage of suitably qualified NCOs to replace them. Of 56,000 personnel in 1938, 3,876 were officers. To fill the senior NCO shortages, junior NCOs had to receive accelerated training, therefore time studying ashore and gaining experience afloat was restricted. The high pace of German rearmament had also reduced training time and there was a rapid turnover of personnel. Destroyer crews were granted only a few years at most to train aboard their new ships. At the outbreak of war many

Großadmiral Erich Raeder visits German naval forces at Narvik, *c*.1942. Raeder was the key figure in the development of the Reichsmarine and its successor, the Kriegsmarine, in the years before the war, but he was realistic about what he could achieve with a still-developing surface fleet against the power of the Royal Navy as hostilities began. Acting on a suggestion from Admiral Rolf Carls, Raeder was instrumental in developing the plan for an invasion of Norway, gaining Hitler's approval in September 1939. Eventually he fell foul of Hitler, who lost confidence in him in the wake of the battle of the Barents Sea on 31 December 1942, Raeder eventually resigning in May 1943. He would survive the war, but was sentenced to life in prison at the Nuremberg trials, eventually being released on grounds of ill-health in 1955 and dying on 6 November 1960. (NH 71408 courtesy of the Naval History & Heritage Command)

crewmembers were still working up; others were only beginning to join the fleet and starting to participate in exercises.

Shortages in sufficiently trained personnel led some to criticize operational performance. In September 1937, Käpitan zur See Oskar Kummetz FdT (*Führer der Torpedoboote*, literally 'Torpedo-Boat Leader') reported that the complexities of handling changes in steam pressure and difficulties accessing the feed-water regulator meant that the four stokers and one NCO in each boiler room could not safely ensure that the boilers would work under all conditions. On 2 November 1937, Korvettenkapitän Max Fechner, commander of *Z 6 Theodor Riedel*, confirmed that it was essential to have an additional crewman in each boiler room, but accommodation could not be found. Both reports mentioned the too-brief training and lack of personnel, and mentioned how the crews were always being changed (every six months, roughly half of personnel changed jobs) as new destroyers became available. Priority was not given to training the highly qualified workforce necessary to operate the boiler and engine rooms. When war was declared, even less time was available.

The quality of officer candidates in the years before 1939 was thought to be poor. In 1928, an officer cadet spent 26 months ashore and 28 months afloat before being commissioned; by 1938, with new destroyers starting to be launched that needed crews, this was reduced to 13 and 18 months, respectively. When addressing a group of ships' commanders, Vizeadmiral Karl Georg Schuster, the head of the Naval Training Inspectorate at Kiel, offered a damning assessment of one body of cadets, noting their scant enthusiasm for military service, their tendency to criticize and their low standards of achievement, which negatively affected their peers. Decrying their

Großadmiral Raeder attributed the delay in commissioning new ships to acute personnel shortages in 1935, specifically among specialists working with weapons, communications and engines (Koop & Schmolke 2003: 10). Here, ratings on board a destroyer enjoy some time off. (Bundesarchiv Bild 101II-MN-1579-16 Foto: Mendel)

lack of interest and pride, their indifference and failure to follow orders, he recommended that these cadets be failed as officer candidates (Koop & Schmolke 2003: 10).

COMMAND AND CONTROL

BRITISH

The flotilla commander – designated by the term 'Captain (D)' with the flotilla number added – was in command of his own ship as well as in operational and administrative charge of his flotilla, and would be responsible for leading his ships into action, making signals to instruct them as he went. Each specialist officer on the leader was also the leader of his branch throughout the flotilla, thus the gunnery officer of *Hardy* was also the flotilla gunnery officer, the torpedo officer the flotilla torpedo officer and so on (Hodges 1971: 7–9). A great deal of independence was necessarily given to ships' captains, more so to flotilla commanders, an acknowledgement that whatever orders one might have received, the theoretical situation at the outset had to be weighed against the reality in the moment: unexpected enemy forces or dispositions, mechanical problems and the weather could all play a part in deciding whether the original objective was still attainable or not. One British captain noted to an American counterpart that being at war in a destroyer required one to think for oneself, there being no higher authority to rely upon or detailed sets of orders within which one could find refuge (Lavery 2006: 174).

There was still a strong reliance in the Royal Navy upon communication by visual means, either conducted by signal flags, lamps or semaphore. Signalling orders by flag

RIGHT
A sailor on board the destroyer *Eskimo* using a new hand-held Aldis signalling lantern, 18 May 1939. Capable of producing a 150,000-candlepower beam, the Aldis lamp used a 12- or 36-volt bulb and a swivelling concave 5in mirrored reflector (powered from a cable running off the ship's mains), and was operated by a trigger on a pistol grip. It was used for daylight signalling of Morse code, as were the larger pedestal-mounted lamps (usually 12in or 20in in diameter) that could signal out to the horizon even in the brightest daylight, and reflect off the underside of clouds for beyond-the-horizon signalling. (*Daily Herald* Archive/SSPL/Getty Images)

FAR RIGHT
During the operations in Norway, Bonte had the help of four U-boats – *U 25*, *U 46*, *U 51* and *U 64* – which guarded the approach to Ofot Fjord. Although the sea was calm, in the early morning of 10 April there was a snow blizzard and the lookout on *U 25* could see nothing; the U-boat was rocked by waves that indicated a ship was passing. That evening visibility improved and *U 25* and *U 51* aimed their torpedoes at the British destroyers as they departed, but all detonated prematurely. Six other U-boats were ordered to Narvik. Here, a U-boat is close to shore in Narvik harbour. (ullstein bild/ullstein bild via Getty Images)

(using sets made up of 26 letter flags, ten numeral flags, 26 special-purpose naval flags and 24 pennants) allowed secure (because the flags were undetectable by the enemy) and simple communication for a destroyer flotilla, though poor visibility or darkness hampered flag signals. Signal lamps could be used in such circumstances, and were also bright enough to be seen easily during daylight hours, their messaging being in Morse code. They were more flexible than the flag system, and could manage signals that were both longer and more complex than those traditionally sent by flag (Lavery 2006: 34). Semaphore was mostly found on larger ships, being unnecessarily elaborate for destroyer communications.

Wireless telegraphy (W/T) and radio telegraphy (R/T) were also available, but during the early years of the war the Royal Navy showed a marked preference for W/T due in part to conservative attitudes, and the fact that wireless signals were transmitted in Morse code and left a record of the messages that could be reviewed at a later date, something not available for the more ephemeral R/T. Despite such prejudices, the obvious value of R/T's speed and clarity in operational situations (not to mention the fact that it did not require the highly skilled and concomitantly scarce operators needed for W/T communications) was undeniable. At the outset of the war, Tribal-class destroyers carried four transmitters that operated on low and medium frequencies, as well as seven receivers.

GERMAN

Although the Germans had settled upon a standard radar set with a wavelength of 82cm (368MHz) by 1938, the Germans were falling behind in radar technology in the late 1930s due to a mix of political problems (Hitler's disapproval) and infighting and secrecy among the host of private companies that worked in the field. The end result was that the first German destroyer to be fitted with radar was *Theodor Riedel* in the months immediately after the Narvik campaign.

For communications, German destroyers relied upon radio-telephony more than radio-telegraphy, having none of the Royal Navy's distrust of the newer technology.

Such systems were fitted as standard in all the ships as they were constructed, destroyers and light cruisers using Lo200L36 LF 0.2, Lo200K36 MF 0.2 and Lo20FKL36 HF 0.2 (low-, medium- and high-frequency) transmitters, and typically the T8L39 (75–1520MHz) and T9K39 (1,500–2,500KHz) superhet receivers (Beauchamp 2001: 338–39). For the detection of submarines, German destroyers were fitted with *S-Anlagen* (hydrophone systems), the 36 receiver microphones being arrayed on either side of the foreship below the waterline (Koop & Schmolke 2003: 40).

The Germans were provided with intelligence about the movements of British ships by air reconnaissance (18 Dornier Do 18 flying boats and three Heinkel He 111 bombers for the flotillas sailing to Trondheim and Narvik) and wireless intercepts of Royal Navy signals that were being successfully read by Kriegsmarine intelligence. Having intercepted the signals traffic generated by British air intelligence, the SKL (Seekriegsleitung – Maritime Warfare Command) correctly surmised that the 'Admiralty has not yet drawn conclusions about a large-scale German action within Weserubung [*sic*] from the air reconnaissance information, but rather expects a break-through into the Atlantic by a pocket battleship' (quoted in Claasen 2004: 122). This would assist the Germans' uninterrupted approach to Narvik, but on 8 April, when the Allies publicly announced the mine-laying operation, the Kriegsmarine thought that Allied naval forces were likely to be ready to intervene to stop the invasion.

Once Bonte's ships were in Narvik harbour, his main concern was to refuel in order to steam home. Operational orders stressed the importance of avoiding serious combat. At 1357hrs on 9 April he informed MGK (Marinegruppenkommando West – Naval Command Group West) and Vizeadmiral Lütjens that he intended to depart after dark on 10 April. The German destroyer captains were not given orders about how to respond to a naval attack and did not know whether to be aggressive or preserve their ships from damage. Having positioned five of his ships in side fjords to threaten the flank of a force attacking Narvik, Bonte was presuming that his captains would react if the harbour was attacked. He had planned to have his ship move to Herjangs Fjord, but Generalmajor Eduard Dietl persuaded him to stay in Narvik harbour to make communication easier, and he retired to his cabin.

During the battle the German destroyer captains would make decisions rapidly and sometimes with little influence from higher command. Once told of Bonte's fate and the losses suffered in Narvik harbour, the new German commander, Bey – with three destroyers in Herjangs Fjord, to the north-east of Narvik – ordered the destroyers *Georg Thiele* and *Bernd von Arnim*, both commanded by Fregattenkapitän Friedrich Berger and positioned in a fjord to the south-west, to break out to the west as they had fuel. Bey was uncertain of the size of the force that had attacked the harbour. Korvettenkapitän Max-Eckart Wolff, the captain of *Georg Thiele*, disobeyed and decided to attack. His decision would result in the loss of two British destroyers. Later in the day, Bey was told by MGK to escape with seaworthy ships, but soon gave up any hope of getting out of the fjord and prepared his ships for an attack; at 1010hrs on 13 April, MGK told him that this would be conducted that afternoon by *Repulse*, *Warspite* and nine destroyers, but Bey was given no orders. He decided to fight and disperse his ships in the fjords.

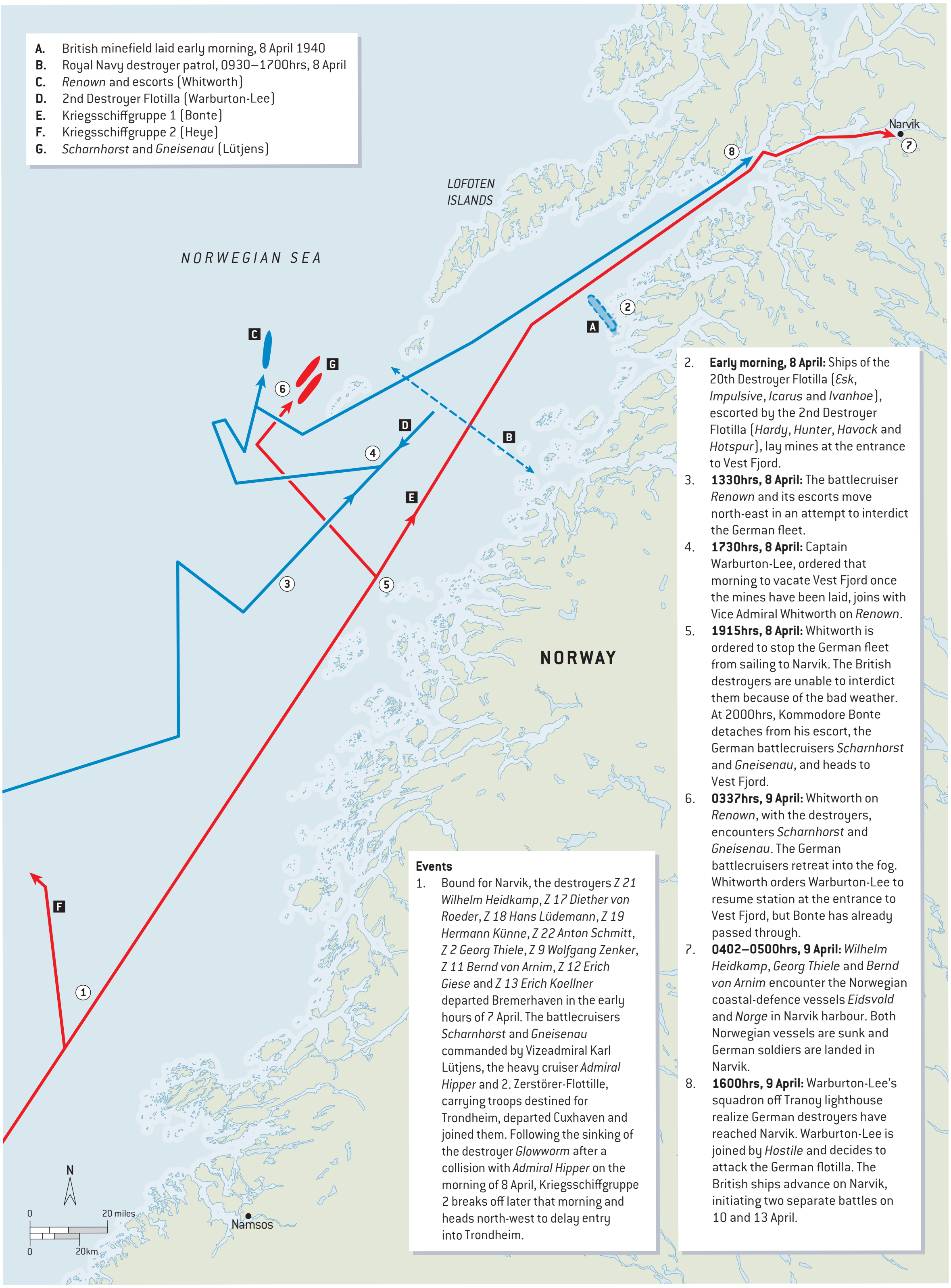
THE STRATEGIC SITUATION

On 1 March 1940, OKW (Oberkommando der Wehrmacht – the German armed forces high command) issued an operational directive that envisaged the German occupation of Denmark and Norway using 100,000 troops and 1,000 aircraft. The invasion – Operation *Weserübung* (Weser Exercise) – would involve naval task forces landing German troops at major Norwegian ports, including Narvik. During the first few days following the landing, the German force at Narvik would be highly vulnerable; it would be operating beyond the range of transport aircraft, and sending reinforcements and supplies by sea would be too hazardous once the element of surprise had been lost.

On 5 April, three days after the invasion of Norway was approved, Kommodore Friedrich Bonte, commanding the ten destroyers carrying Generalmajor Eduard Dietl's Gebirgsjäger-Regiment 139 to Narvik, briefed his captains, telling them they would have to cover 1,000 miles in the face of British naval supremacy. The ten destroyers were loaded with troops at Wesermünde on 6 April and departed that night. Bonte left Bremerhaven early on 7 April. The battlecruisers *Scharnhorst* and *Gneisenau*, commanded by Vizeadmiral Karl Lütjens, departed Cuxhaven to rendezvous with Bonte (1., 3. and 4. Zerstörer-Flottillen) and form Kriegsschiffgruppe 1; Kriegsschiffgruppe 2, including the heavy cruiser *Admiral Hipper* and 2. Zerstörer-Flottille, carrying troops destined for Trondheim, left Cuxhaven on the same day. The Germans hoped that if the force was spotted, the British would think another break-out attempt into the North Atlantic was in the offing. (In November 1939, *Scharnhorst* and *Gneisenau* had sortied into the Norwegian Sea and eluded the British Fleet both on their trip out and during their return.)

OPPOSITE

British and German naval forces off the Norwegian coast, 8–9 April 1940.



A. British minefield laid early morning, 8 April 1940
B. Royal Navy destroyer patrol, 0930–1700hrs, 8 April
C. *Renown* and escorts (Whitworth)
D. 2nd Destroyer Flotilla (Warburton-Lee)
E. Kriegsschiffgruppe 1 (Bonte)
F. Kriegsschiffgruppe 2 (Heye)
G. *Scharnhorst* and *Gneisenau* (Lütjens)

Events

1. Bound for Narvik, the destroyers *Z 21 Wilhelm Heidkamp*, *Z 17 Diether von Roeder*, *Z 18 Hans Lüdemann*, *Z 19 Hermann Künne*, *Z 22 Anton Schmitt*, *Z 2 Georg Thiele*, *Z 9 Wolfgang Zenker*, *Z 11 Bernd von Arnim*, *Z 12 Erich Giese* and *Z 13 Erich Koellner* departed Bremerhaven in the early hours of 7 April. The battlecruisers *Scharnhorst* and *Gneisenau* commanded by Vizeadmiral Karl Lütjens, the heavy cruiser *Admiral Hipper* and 2. Zerstörer-Flottille, carrying troops destined for Trondheim, departed Cuxhaven and joined them. Following the sinking of the destroyer *Glowworm* after a collision with *Admiral Hipper* on the morning of 8 April, Kriegsschiffgruppe 2 breaks off later that morning and heads north-west to delay entry into Trondheim.
2. **Early morning, 8 April:** Ships of the 20th Destroyer Flotilla (*Esk*, *Impulsive*, *Icarus* and *Ivanhoe*), escorted by the 2nd Destroyer Flotilla (*Hardy*, *Hunter*, *Havock* and *Hotspur*), lay mines at the entrance to Vest Fjord.
3. **1330hrs, 8 April:** The battlecruiser *Renown* and its escorts move north-east in an attempt to interdict the German fleet.
4. **1730hrs, 8 April:** Captain Warburton-Lee, ordered that morning to vacate Vest Fjord once the mines have been laid, joins with Vice Admiral Whitworth on *Renown*.
5. **1915hrs, 8 April:** Whitworth is ordered to stop the German fleet from sailing to Narvik. The British destroyers are unable to interdict them because of the bad weather. At 2000hrs, Kommodore Bonte detaches from his escort, the German battlecruisers *Scharnhorst* and *Gneisenau*, and heads to Vest Fjord.
6. **0337hrs, 9 April:** Whitworth on *Renown*, with the destroyers, encounters *Scharnhorst* and *Gneisenau*. The German battlecruisers retreat into the fog. Whitworth orders Warburton-Lee to resume station at the entrance to Vest Fjord, but Bonte has already passed through.
7. **0402–0500hrs, 9 April:** *Wilhelm Heidkamp*, *Georg Thiele* and *Bernd von Arnim* encounter the Norwegian coastal-defence vessels *Eidsvold* and *Norge* in Narvik harbour. Both Norwegian vessels are sunk and German soldiers are landed in Narvik.
8. **1600hrs, 9 April:** Warburton-Lee's squadron off Tranoy lighthouse realize German destroyers have reached Narvik. Warburton-Lee is joined by *Hostile* and decides to attack the German flotilla. The British ships advance on Narvik, initiating two separate battles on 10 and 13 April.

Along the Jutland Peninsula, the weather was calm and cloudless; 12 Royal Air Force Bristol Blenheim light bombers attacked the German force but failed to hit their targets. When at 1735hrs the Blenheims' sighting report reached Admiral Charles Forbes, the commander of the Home Fleet, he raised steam; the battleships *Rodney* and *Valiant*, the battlecruiser *Repuls*e and ten destroyers departed Scapa Flow at 2015hrs and headed north-east in order to intercept what was believed to be a German break-out into the North Atlantic. The 2nd Cruiser Squadron (Vice Admiral Sir Frederick Edward-Collins) also departed Rosyth. Forbes received reports that a German invasion of Norway was being prepared and that a force of ten ships intended to land troops at Narvik, but Vice Admiral Phillips told him that he doubted the reports' value, suggesting they might be misleading (Haarr 2012: 85). Both Churchill and Admiral of the Fleet Sir Dudley Pound, the Chief of the Naval Staff, thought that an invasion was beyond the Kriegsmarine's capabilities.

British ships were already situated in Norwegian waters. Vice Admiral William Whitworth's force (the battlecruiser *Renown*, screened by the destroyers *Glowworm*, *Greyhound*, *Hyperion* and *Hero*) was off Vest Fjord, and the 2nd Destroyer Flotilla under Captain Warburton-Lee (*Hardy*, *Hunter*, *Havock* and *Hotspur*) was overseeing the 20th Destroyer Flotilla (*Esk*, *Impulsive*, *Icarus* and *Ivanhoe*), fitted to lay mines and with no torpedoes; the light cruiser *Birmingham* and the destroyers *Fearless* and *Hostile* were also in the area. The Chiefs of Staff had developed Plan R4, in which troops would be landed to deny the use of Norwegian ports to the Germans; this plan would be launched the moment that reports of a German invasion of Norway – or clear evidence of the Germans' intention to invade – were received (Claasen 2004: 123). Pound would compromise the timely arrival of Allied soldiers, however; with Churchill's approval, he ordered the ships to disembark the landing force by early afternoon on 8 April and join the Home Fleet to prepare for a naval battle with the German fleet as they attempted to break out into the North Atlantic.

On the morning of 8 April the weather worsened, and visibility reduced to 1 mile. The first encounter between the British and German destroyers occurred when *Glowworm*, which had been separated since a man-overboard incident on 6 April, encountered *Hans Lüdemann*; the German ship's crew tried passing their ship off as Swedish, then fired two salvoes that missed before disappearing into the mist.

At 0802hrs, *Glowworm* encountered *Bernd von Arnim*. The German ship's captain, Korvettenkapitän Kurt Rechel, tried increasing speed to 35kn in order to escape, but a wave drove *Bernd von Arnim*'s bows under water. Rechel could only right his ship by reducing speed to 27kn. A gunnery duel in pitching rolling seas ensued. *Glowworm* could maintain a higher speed and was gaining. The German heavy cruiser *Admiral Hipper* was ordered to intercept, but did not know which ship was British until *Glowworm* signalled, the British ship's crew thinking *Admiral Hipper* was *Renown*. A close-range engagement began at 0859hrs and ended at 0910hrs when *Glowworm* scraped along *Admiral Hipper*'s side and then capsized and sank. *Admiral Hipper* shipped over 500 tons of water through the hole in its side, but pressed on with 2. Zerstörer-Flottille, but not yet for Trondheim as they would be too early; instead, the German ships headed north-west in order to delay their approach.

At 1007hrs, following the laying of mines, Pound ordered the eight destroyers off Vest Fjord to join *Renown*. Whitworth screened westwards, leaving the entrance to

Here, *Glowworm* can be seen from *Admiral Hipper*. Vizeadmiral Karl Lütjens, commanding the battleships *Scharnhorst* and *Gneisenau*, thought the German attack on Narvik was compromised by the encounter between the two ships. He considered staying with the destroyers bound for Trondheim, but once he heard the British announcement that mines had been laid off Vest Fjord, he knew that Royal Navy ships posed a threat to Kommodore Friedrich Bonte and followed the plan. At 0859hrs on 8 April, *Admiral Hipper* fired an initial salvo from 9,200yd. While closing, *Glowworm* was damaged by five salvoes; using the cover of a smokescreen, the destroyer's captain, Commander Gerard Roope, tried to evade and fired five torpedoes that missed. Keen to resolve the matter, *Admiral Hipper* also closed, intending to ram. *Glowworm* broke cover and fired five torpedoes again, this time achieving a near-miss. *Admiral Hipper* pursued the destroyer into the smoke and closed to 900yd. *Glowworm* may have accidentally turned towards *Admiral Hipper* or intentionally rammed the German ship; either way, at 0910hrs, the destroyer scraped along *Admiral Hipper*'s side and then capsized and sank. (Keystone/Getty Images)

Vest Fjord open. The British view that a German break-out attempt was occurring was reinforced at 1430hrs, when *Admiral Hipper* was spotted, marking time before heading towards Trondheim. Admiral Forbes attempted to intercept and steered north and then north-west, further away from the invasion flotillas approaching Norway. He then sent *Repulse* and some destroyers to assist Whitworth and steamed south with the rest of the Home Fleet at 2000hrs, thinking enemy ships were to be found there. Owing to the bad weather, RAF flying boats did not spot additional German invasion forces further south.

Bonte's force did not have enough fuel to get to Trondheim if his route to Narvik was blocked. Stern waves battered the destroyers as they steamed north, each with 200 *Gebirgsjäger* on board. The storm worsened south of the Lofoten Islands, and equipment and vehicles were swept overboard. The destroyers reached the lee of the islands that evening; the destroyers were riding high in the sea because of near-empty fuel bunkers, meaning that the pitch of the ships was reaching the limit that could be endured. The battlecruisers were detached north-west, towards Whitworth.

At 1915hrs, Whitworth belatedly received an order to prevent enemy ships from reaching Narvik. The worsening weather and the onset of night persuaded him to keep his ships out at sea. His destroyers could do nothing in the worsening weather, but *Renown* was capable of moving towards Vest Fjord. At 2000hrs, Bonte arrived where Whitworth had been 2½ hours previously. Whitworth recorded that although the weather improved after midnight, he decided to wait until 0230hrs – when there was sufficient dawn light for the destroyers, widely spaced to ensure their safety in the poor weather, to maintain contact with one another – to turn his squadron to the south-east (Plevy 2008: 115). Whitworth thought the Germans would be doing the same, but on hearing they had steamed onwards to Narvik realized he had made a mistake that had given Bonte free access to Ofot Fjord.

Only at 0240hrs did Whitworth turn towards land, encountering Lütjens and the battlecruisers *Scharnhorst* and *Gneisenau* at 0337hrs. A few shots were exchanged, starting at long range, but the two battlecruisers, misidentifying the British destroyers as other capital ships, disappeared into the fog, pursued by *Renown*. *Scharnhorst* and

When *Wilhelm Heidkamp* entered Narvik harbour, Kapitänleutnant Heinrich Gerlach was sent to the Norwegian coastal-defence vessel *Eidsvold*, shown here, to demand its surrender. Kommandørkaptein Odd Isaachsen Willoch refused and Kommandørkaptein Per Askim on *Norge*, the other Norwegian coastal-defence vessel in the harbour, told Willoch to fight. Each of the Norwegian vessels was equipped with two 21cm and four 15cm guns. Before hostilities could begin, the German officer needed to leave and on his way back he fired a star shell that prompted Dietl to tell Bonte to fire. *Wilhelm Heidkamp* had veered to within 110yd of *Eidsvold*, but had pulled back into a snow screen 550yd away. Initially, Bonte refused a request from Korvettenkapitän Hans Erdmenger, commanding officer of *Wilhelm Heidkamp*, to initiate fire, as orders specified that on no account was he to fire first; at 0437hrs, however, Bonte relented and ordered four torpedoes to be launched at *Eidsvold*, which sank in seconds, killing Willoch and the vast majority of his sailors. There were 105 survivors (97 from *Norge*) out of the 282 Norwegian crewmen aboard the two coastal-defence vessels. (Bundesarchiv Bild 134-B2025 Foto: o. Ang)

Gneisenau fired at *Hardy* and *Hunter*, but neither destroyer was hit. Whitworth ordered Warburton-Lee to resume station at the entrance to Vest Fjord as *Renown* was joined by the battlecruiser *Repulse* with four destroyers (*Bedouin*, *Eskimo*, *Punjabi* and *Kimberley*), as well as the light cruiser *Penelope*. Warburton-Lee arrived at the entrance to Vest Fjord, but only after Bonte's destroyers had passed through it.

Bonte had pressed on for Narvik, with the destroyer *Erich Giese* lagging 50 miles behind with a compass failure and losing oil through a hole in the hull (the ship caught up with Bonte before Warburton-Lee blocked Vest Fjord), and entered Ofot Fjord. Bonte sent Fregattenkapitän Erich Bey's 4. Zerstörer-Flottille (comprising *Z 9 Wolfgang Zenker*, *Z 12 Erich Giese*, *Z 13 Erich Koellner*, *Z 17 Diether von Roeder* and *Z 19 Hermann Künne*) to land soldiers at the Elvegård barracks in Herjangs Fjord. At 0355hrs, *Wilhelm Heidkamp*, *Georg Thiele* and *Bernd von Arnim* made for Narvik harbour and encountered the Norwegian coastal-defence vessel *Eidsvold* at 0402hrs; the Norwegians fired a shot across the bows and ordered the Germans to heave to. Kommandørkaptein Odd Isaachsen Willoch on *Eidsvold* observed *Wilhelm Heidkamp*, but *Georg Thiele* and *Bernd von Arnim* slipped into the harbour unnoticed in the fog. After refusing to surrender, *Eidsvold* was sunk by three of four torpedoes launched by *Wilhelm Heidkamp* at 0437hrs. *Norge*, a second Norwegian coastal-defence vessel, started to fire at *Bernd von Arnim* at a range of 800yd, but the salvo fell short; *Norge* hid behind a merchant ship while the German destroyer landed troops at the pier. Pushing out again, *Bernd von Arnim* fired seven torpedoes at *Norge* when the coastal-defence vessel reappeared; the last torpedo hit the Norwegian vessel, sinking it at 0455hrs.

The Germans also sent four merchant ships to Narvik – two freighters carrying vehicles, artillery and supplies, plus two oilers. When the Norwegian fishery-protection ship *Nordkapp* approached the oiler *Kattegat*, the German ship's captain decided to scuttle. Only the oiler *Jan Wellem*, a converted whaler sailing from Murmansk, reached Narvik; it could refuel only two ships at a time in an operation that took eight hours. Bonte prepared his ships to leave at the earliest opportunity, but would be delayed. The Allies, not yet aware of the strength of the German forces in Narvik, were having difficulties working this out prior to launching an attempt to recapture the town.

COMBAT

THE FIRST BATTLE OF NARVIK

Captain Warburton-Lee had set out to escort destroyers that had been converted to lay mines in Vest Fjord by having their guns and torpedo tubes removed. At 0952hrs on 9 April, Warburton-Lee was ordered by Forbes to land troops at Narvik to forestall a German landing (Plevy 2008: 117); at midday, when Oslo radio reported German troops had landed at Narvik, he received further orders from the First Sea Lord Sir Dudley Pound to attack a German ship that was thought to have reached the port and to use his own judgement to decide whether to land troops and attempt to recapture Narvik (Plevy 2008: 117). The Military Intelligence officer in the port could see the German invasion force, but had no means of reporting this information. At 1600hrs, the paymaster, Lieutenant Geoffrey Stanning, and Lieutenant George Heppel, the torpedo officer, were landed at the pilot station at Tranoy to see if any Germans had passed by. Stanning was told that five destroyers had been seen earlier in the day; a boy mentioned another group, but he presumed they were the same ships the pilot was referring to rather than others. Stanning was warned that they should wait until they were reinforced before proceeding and that the German ships were larger than the British destroyers.

That same day, on 9 April, Whitworth had drafted a signal to the light cruiser *Penelope* to take the destroyers *Bedouin*, *Punjabi*, *Eskimo* and *Kimberley* under command and support Warburton-Lee's move on Narvik, but cancelled the order that evening (Dickens 1974: 45). Whitworth subsequently expressed his regret that he did not order Warburton-Lee to wait until he was joined by *Renown* before mounting the attack (Haarr 2012: 338).

A German destroyer ploughs through heavy seas off Norway, *c.*1940. The difficulties that the weather presented to the task forces of Operation *Weserübung* were considerable, the rough seas making for hard going, not to mention causing real damage to the destroyers as well as to larger ships such as the battlecruiser *Scharnhorst*, especially when they were forced to operate at high speed. (NH 71433 courtesy of the Naval History & Heritage Command)

Warburton-Lee signalled that he intended to attack at first light on 10 April. His orders to his ships warned his captains that the Germans could have a number of destroyers plus a U-boat in the area; his subordinates were to engage all targets immediately, paying particular attention to any enemy ships stationed in inlets. Under cover of smoke, *Hardy*, *Hunter* and *Havock* were to engage enemy shipping with gunfire and torpedoes, while *Hotspur* was to engage enemy ships and any shore batteries in German hands near Framnes; *Hostile* was to assist as required (Dickens 1974: 48). To avoid congestion, all ships were to turn to port when firing. Landing parties were organized to seize the port.

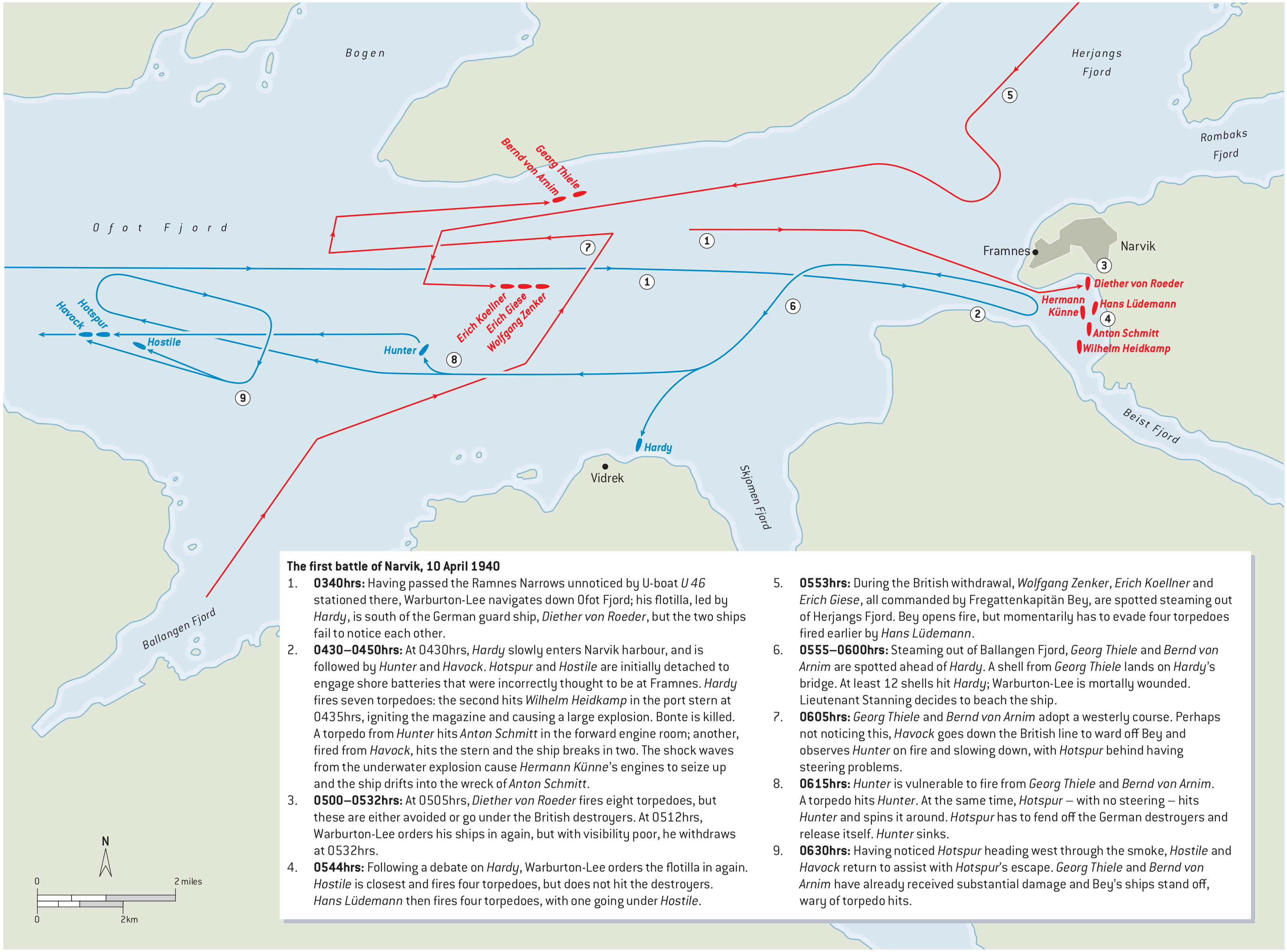
At 0130hrs on 10 April the British destroyers turned into Ofot Fjord at 20kn, moving past *U 25* unnoticed. Ofot Fjord splits into three smaller branches: Herjangs Fjord, the biggest, leads to Elvegård; Rombaks Fjord in the middle is deep and narrow, while Beis Fjord, the southern branch, has a narrow entrance that widens into Narvik harbour before narrowing again to head off to the south-east. Able Seaman Cyril Cope, a torpedoman aboard *Hardy*, described the approach:

> We ploughed our way through the blinding blizzard of freezing snow to the entrance of Vest fjord arriving at midnight, dead on time. All hands were at action stations, all machinery except main engines stopped – nobody was allowed to make noises. We even had to talk in whispers, and we weren't allowed to move about unnecessarily. Every action station exposed to the cold, bitter weather had a 'Dixie' full of hot tea or coffee, with plenty of rum. (Quoted in Cope 2015: 141)

Les Smale, part of a gunnery crew, described how because of the heavy snow they could not see either shore and as they moved about in efforts to keep warm they were forming circles of ice on the deck. Stanning recalled that although the weather was very still at first, later on, poor visibility meant his ship almost ran aground on the snowy beach (Cope 2015: 138, 140). Cope described the ship as 'using "Asdic" to help in the navigation. This gave us soundings off the sides of the fjord, because most of the time we could not see the sides or anything in front of us' (quoted in Cope 2015: 144). Speed was reduced to 12kn as visibility was only 400yd.

OPPOSITE

The first battle of Narvik, 10 April 1940.


Bogen
Herjangs Fjord
Rombaks Fjord
Ofot Fjord
Framnes
Narvik
Beist Fjord
Skjomen Fjord
Vidrek
Ballangen Fjord
Georg Thiele
Bernd von Arnim
Erich Koellner
Erich Giese
Wolfgang Zenker
Diether von Roeder
Hermann Künne
Hans Lüdemann
Anton Schmitt
Wilhelm Heidkamp
Hardy
Hunter
Hostile
Hotspur
Havock
①
②
③
④
⑤
⑥
⑦
⑧
⑨
N
0
2 miles
0
2km

The first battle of Narvik, 10 April 1940

1. **0340hrs:** Having passed the Ramnes Narrows unnoticed by U-boat *U 46* stationed there, Warburton-Lee navigates down Ofot Fjord; his flotilla, led by *Hardy*, is south of the German guard ship, *Diether von Roeder*, but the two ships fail to notice each other.
2. **0430–0450hrs:** At 0430hrs, *Hardy* slowly enters Narvik harbour, and is followed by *Hunter* and *Havock*. *Hotspur* and *Hostile* are initially detached to engage shore batteries that were incorrectly thought to be at Framnes. *Hardy* fires seven torpedoes: the second hits *Wilhelm Heidkamp* in the port stern at 0435hrs, igniting the magazine and causing a large explosion. Bonte is killed. A torpedo from *Hunter* hits *Anton Schmitt* in the forward engine room; another, fired from *Havock*, hits the stern and the ship breaks in two. The shock waves from the underwater explosion cause *Hermann Künne*'s engines to seize up and the ship drifts into the wreck of *Anton Schmitt*.
3. **0500–0532hrs:** At 0505hrs, *Diether von Roeder* fires eight torpedoes, but these are either avoided or go under the British destroyers. At 0512hrs, Warburton-Lee orders his ships in again, but with visibility poor, he withdraws at 0532hrs.
4. **0544hrs:** Following a debate on *Hardy*, Warburton-Lee orders the flotilla in again. *Hostile* is closest and fires four torpedoes, but does not hit the destroyers. *Hans Lüdemann* then fires four torpedoes, with one going under *Hostile*.
5. **0553hrs:** During the British withdrawal, *Wolfgang Zenker*, *Erich Koellner* and *Erich Giese*, all commanded by Fregattenkapitän Bey, are spotted steaming out of Herjangs Fjord. Bey opens fire, but momentarily has to evade four torpedoes fired earlier by *Hans Lüdemann*.
6. **0555–0600hrs:** Steaming out of Ballangen Fjord, *Georg Thiele* and *Bernd von Arnim* are spotted ahead of *Hardy*. A shell from *Georg Thiele* lands on *Hardy*'s bridge. At least 12 shells hit *Hardy*; Warburton-Lee is mortally wounded. Lieutenant Stanning decides to beach the ship.
7. **0605hrs:** *Georg Thiele* and *Bernd von Arnim* adopt a westerly course. Perhaps not noticing this, *Havock* goes down the British line to ward off Bey and observes *Hunter* on fire and slowing down, with *Hotspur* behind having steering problems.
8. **0615hrs:** *Hunter* is vulnerable to fire from *Georg Thiele* and *Bernd von Arnim*. A torpedo hits *Hunter*. At the same time, *Hotspur* – with no steering – hits *Hunter* and spins it around. *Hotspur* has to fend off the German destroyers and release itself. *Hunter* sinks.
9. **0630hrs:** Having noticed *Hotspur* heading west through the smoke, *Hostile* and *Havock* return to assist with *Hotspur*'s escape. *Georg Thiele* and *Bernd von Arnim* have already received substantial damage and Bey's ships stand off, wary of torpedo hits.

The weather on 10 April was foggy and variable, with low visibility at times, whereas on 13 April it was overcast, with clouds at 1,000–3,000ft producing snow showers, a south-westerly Force 3–4 wind, ground snow at sea level on the shore, and visibility at 10 miles. Here, the entrance to the harbour has been photographed from a Swordfish aircraft. (© IWM A 46)

Hardy was in the lead and at 0210hrs, as the fjord narrowed, the ship ordered 'hard a starboard' to avoid an obstacle. This led to *Hotspur* losing sight of *Hunter*, and *Hardy* in plain language used wireless telegraphy to disseminate course and whereabouts, but these signals were not intercepted by the enemy. By 0230hrs the British destroyers were through the narrows, with *Hostile* slightly delayed having veered off to avoid a civilian ferry. *U 46* did not observe them, despite being on the surface. Civilian traffic may have interfered with the hydrophones of both U-boats.

At 0340hrs, *Hardy* was south of their intended position. This was fortuitous as *Diether von Roeder*, on patrol in the fjord, was where the British ship was supposed to be. The two ships were on the same course, 1.5 miles apart. At 0343hrs, Warburton-Lee telegraphed that he was steering towards Narvik harbour and at 0348hrs reduced speed to 6kn. As British torpedo tubes had to be locked in position abeam prior to launching, it would be necessary for Warburton-Lee to approach from the south and then steer to port to bring his tubes to bear. At 0403hrs, engines were stopped, but the crew soon discovered that they were to the south of the harbour entrance and steamed further north.

That morning, Bonte had only four of his ships refuelled and signalled that his other ships would not be ready until the evening as the oiler *Jan Wellem* had low pumping capacity. *Georg Thiele* and *Bernd von Arnim* had refuelled and were placed in Ballangen Bay, 8 miles west of Narvik on the south side of Ofot Fjord. *Hans Lüdemann* and *Hermann Künne* were being refuelled by *Jan Wellem* in the harbour; *Anton Schmitt* was awaiting its turn 250yd to the south. *Wolfgang Zenker* and *Erich Koellner* had refuelled, but *Erich Giese* was low on fuel; the three ships were in Herjangs Fjord because Narvik harbour was crowded with 25 merchant ships of various sizes and nationalities. Bonte was asleep aboard the refuelled *Wilhelm Heidkamp*, anchored 500yd south of *Jan Wellem* at the southern end of the harbour. The German Army officer who shared Raeder's cabin advised him to stay dressed in bed in case of emergency.

On board *Hardy*, Stanning recalled his shipmates' surprise that there was no hostile shipping present; they had expected to encounter a destroyer on patrol or a U-boat (Cope 2015: 149). Hopes revived that a landing party could be set ashore. The fjord was widening into a bay and the snow was clearing. The gun crews were ready to fire. The ships crept forward and *Hardy* stopped engines to wait for the other ships to catch up and then at 0430hrs slowly entered Narvik harbour, followed by *Hunter* and

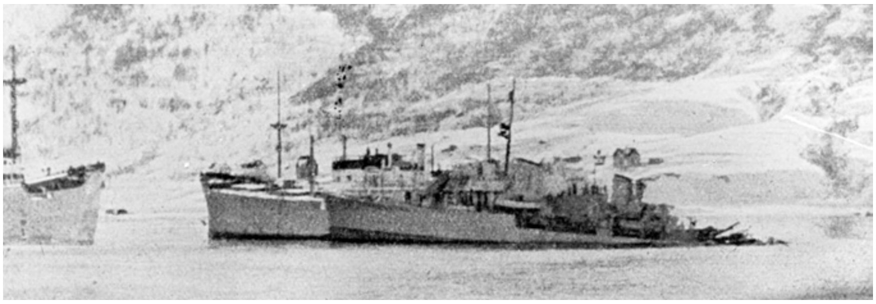
Havock. Visibility had increased to about 1 mile. *Hotspur* and *Hostile* were detached to engage shore batteries that incorrectly were thought to be at Framnes, north of Narvik harbour. The two destroyers were not required to search the side fjords; rather they had orders to engage any ships that emerged from them.

Warburton-Lee placed *Hardy* alongside the heavily laden British iron-ore ship *Blythemoor*. Heppel had the forward torpedo tubes trained to starboard. Cope described how 'The snow also gave us a problem with the guns and torpedoes. It kept piling up on them, the breech blocks froze up, the traversing gear on the tubes got locked' (quoted in Cope 2015: 146). Smale noticed plenty of merchant ships, but his crew wanted to target destroyers with their gun, which they had unfrozen with hot oil. Then the Chief Yeoman, Arthur Campian, unfurled *Hardy*'s battle ensign. Cope cut the guard rails and at 0435hrs three torpedoes were fired at a range of 1,500yd. The first hit a freighter, the second hit *Wilhelm Heidkamp* in the port stern, igniting the magazine and causing a large explosion followed by many other smaller ones, and the third missed. Bonte and 80 men were killed. *Wilhelm Heidkamp* would play no further part in the battle.

Hardy's aft torpedo tubes were ordered turned to starboard, but the packed ice made this a slow process and the five 4.7in guns opened up in the interim. Cope described how 'Our crew ran to the assistance of our mates, with two men on each of the tubes' handles, the rest of us were pushing like mad on the back end of the tubes' (quoted in Cope 2015: 158). Before the tubes had locked in position, Heppel pressed the firing switch. The first torpedo brushed along the stanchion before entering the water and three others followed when the tubes were securely in position. No German destroyers were hit, but a railway jetty used to unload iron-ore wagons was (Cope 2015: 159).

Warburton-Lee proceeded at 20kn out of the harbour. Then it was the turn of *Hunter* (firing eight torpedoes) and *Havock* (firing three, but reporting five fired). A torpedo fired from *Hunter* hit *Anton Schmitt* in the forward engine room; another, fired from *Havock* 16 minutes after *Hardy* had entered the harbour, hit *Anton Schmitt*'s stern and the ship broke in two. Having broken moorings with *Jan Wellem*, *Hermann Künne* was 45yd from *Anton Schmitt* when the second torpedo struck; the shock waves of the underwater explosion caused *Hermann Künne*'s engines to seize up and the destroyer drifted into the wreck of *Anton Schmitt*, the two ships becoming entangled for the next 40 minutes.

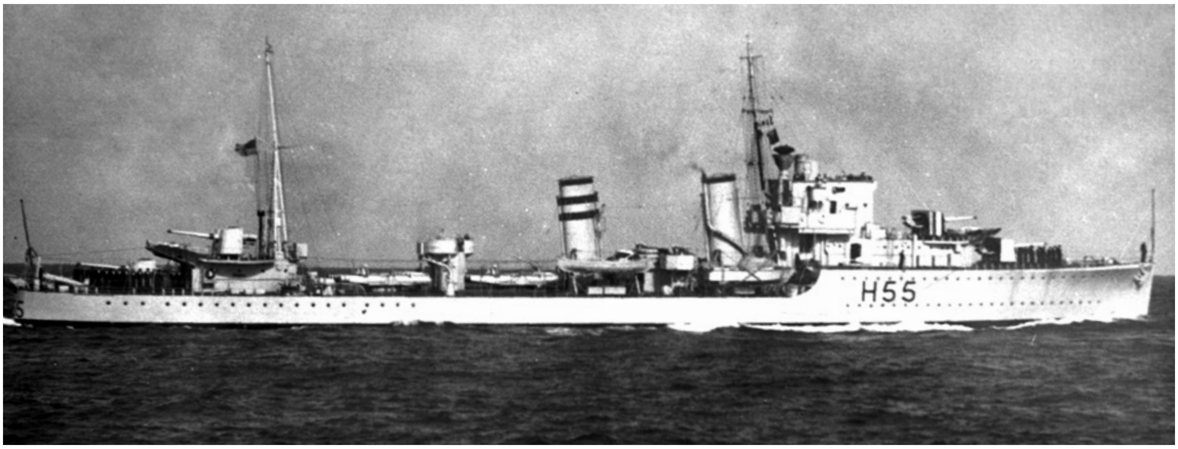
Having returned from patrol, Korvettenkapitän Erich Holtorf on *Diether von Roeder* could react quickly to the attack and began firing at *Havock*. *Hans Lüdemann*,



A torpedo fired by *Hardy* hit *Wilhelm Heidkamp* in the port stern, as is evident in this grainy wartime photograph. The resulting explosion of the magazine threw the aft turrets into the air; one arced over and landed back on the foredeck. Korvettenkapitän Hans Erdmenger survived and tied up the wreck of his ship to an iron-ore vessel. The torpedoes were removed from *Wilhelm Heidkamp* and soon after the ship sank. (Bundesarchiv Bild 134-C2661 Foto: o. Ang) also free from *Jan Wellem*, fired guns at *Havock*. Return fire hit *Hans Lüdemann*, knocking out a forward gun and starting a fire that led to the flooding of the magazine. Having returned from a brief foray north of the harbour to search for shore batteries, *Hotspur* and *Hostile* joined in. *Hotspur* was ready to lay a smokescreen to assist the withdrawal of the other ships, but was told to stop as no hits were being sustained on the flotilla. Instead, Warburton-Lee ordered *Hotspur*'s captain, Commander Herbert Layman, to fire and at 0500hrs four torpedoes were launched at merchant ships, hitting two. *Hostile* fired none, but used guns instead. The gun sights were obscured by snow, as was observation of fall of shot, and salvoes were fired from 7,000yd adjusting for 400yd in range. Shells landed on *Diether von Roeder* – still at anchor because there was no power supply to the windlass that lifted the anchor – destroying a gun, rupturing a fuel tank, causing a fire in No. 2 boiler room that filled the ship with black smoke, and also hitting near the aft magazine, which had to be flooded. Holtorf feared that the fire could ignite the other magazines; not able to move the ship because of its anchor, at 0505hrs he fired eight torpedoes towards the harbour entrance. He then slowly withdrew his ship between blazing merchant ships. The torpedoes obtained a wide spread because of the torpedo fire control that enabled each torpedo to be angled at the last moment. He then ordered all unnecessary personnel to leave the ship.

Warburton-Lee's flotilla circled anticlockwise outside the harbour, finding positions to fire their guns into the murky haze. *Hardy*, *Hunter* and *Havock* reported torpedoes passing under their hulls. *Hardy* was closest; *Havock*, furthest from the firing, still had to motor 2 miles west to avoid four torpedoes and the captain, Lieutenant Commander Rafe Courage, thought the fifth would hit. Courage had a habit of draping himself over the compass in moments of tension and thought they were going to be hit; he apologized to his men and took cover. Heppel on *Hardy* would report 12 torpedoes in total; two of these ran under *Hardy*, but he surmised that because of the degaussing equipment on the destroyers the magnetic pistols failed to detonate the warheads. (The earth's magnetic field at the northerly latitude also contributed to the failure of the devices.) Smale described how each time a torpedo was seen, *Hardy* moved at full speed towards it in order to present a smaller target. They evaded one by moving into the path of another that went underneath the ship. The torpedoes, usually set to a depth of 9–13ft, ran slightly deeper in the less salty waters of the fjords. The British destroyers had a draft of 12ft 6in and were riding high as they were low on fuel. Two torpedoes beached west of Ankenes, while two were seen by *Hostile*; six were seen by *Hotspur*.

At 0512hrs, Warburton-Lee ordered all ships to follow round again in a second attack to be carried out at 20kn in order to make them harder targets for German torpedoes. *Hostile* had yet to fire any of its torpedoes and the captain, Commander John Wright, intended to target *Diether von Roeder*, but Holtorf had the German ship's bow facing out to the harbour entrance to present less of a target. The British ships used their guns against shore batteries as well as any ships in the harbour, giving the German destroyers particular attention. With visibility poor, Warburton-Lee soon withdrew into the fjord at 0532hrs. At 0515hrs, *Hans Lüdemann* had given notice of the attack to the other ships not in Narvik harbour.



Hostile, most likely pictured in the late 1930s. The TSDS (Two-Speed Destroyer Sweep) mine-clearing system can just be made out on the ship's stern. The TSDS consisted of a pair of paravanes stowed on the destroyer's quarterdeck that could be lowered by davits in the ship's wake, spreading out with winches hauling and veering the wires to control the track of the sweep. The equipment was designed to sweep moored mines, though it was of no use when dealing with magnetic mines. It was capable of use at two speeds (25kn, 12kn), hence the name. It was TSDS that *Icarus*, *Hero* and *Foxhound* would deploy to sweep for mines in advance of *Warspite* during the early stages of the second battle of Narvik. (Arkivi/Getty Images)

Warburton-Lee debated with his officers as to whether another attack was necessary. They were unsure what damage they had inflicted and did not want to withdraw if there was no longer any threat. Warburton-Lee was worried about enemy torpedoes, but Stanning recalled how other officers persuaded the captain that most of these were already used. Heppel suggested that permanent control of the fjord was attainable and wanted to make sure *Hostile* had a better chance to let loose its torpedoes. Warburton-Lee realized that a guard ship or two emanating from a side fjord would have to be encountered on the way out of the main fjord, but did not think that five were out there. At 0544hrs, all five of his ships steamed in for the third time at 20kn; all were wary of torpedoes fired by the enemy. The ships should have circled, but were free to break the line to obtain a better firing position and did not enter the harbour this time. Blazing fuel-oil and a sinking merchant ship were in their way and smoke and dense mist obstructed their view. *Hostile* was closest and fired four torpedoes, but did not hit any of the German destroyers. Further west in the bay, *Hans Lüdemann* then fired four torpedoes at 0550hrs, one of which went under *Hostile*. All four torpedoes travelled out of the bay, one visible on the surface.

At 0551hrs, Warburton-Lee signalled a withdrawal and smoke was made as his flotilla steered to the west at 30kn. As the British ships steamed away from the harbour, visibility was improving, and at 0553hrs *Hardy* spotted what was initially thought to be a cruiser and two destroyers coming out of Herjangs Fjord about 4 miles away. In reality this was a force of three German destroyers – *Wolfgang Zenker*, *Erich Koellner* and *Erich Giese*, all commanded by Fregattenkapitän Bey – that had weighed anchor at 0540hrs and were now emerging from Herjangs Fjord in quarter line, putting them on the starboard quarter of the British ships. Warburton-Lee ordered *Hardy*'s guns to open fire at 7,000yd, but the shells fell short as did those from *Havock*, *Hunter* and *Hotspur* because the gunners assumed the enemy was steaming at full speed towards them, not aware that *Erich Giese* had only two boilers working; as a result, the German ships were further away than anticipated. Bey opened fire with his forward guns, but momentarily had to evade the four torpedoes fired earlier from *Hans Lüdemann*. Bey was also receiving friendly fire from the ships in Narvik harbour and was cautious because his orders specified a safe return home; he did not want to risk his remaining ships against what he thought was a superior enemy.

The reluctant pursuit had lasted for 20 miles when Cyril Cope observed that 'all of a sudden through the mist and swirling snow, two big ships crossed our bows. Warburton-Lee ordered a signal by Aldis lamp to determine their identity' (quoted in Cope 2015: 181). The first lieutenant on *Hardy*, Lieutenant Commander V. Mansell, described how the British ships raced away down the fjord firing at the enemy astern. They were surprised to see two more ships ahead; initial speculation that they might be British cruisers quickly evaporated as it soon became clear that they were a pair of large German destroyers, leaving the British ships to contend with enemies both ahead and astern (Cope 2015: 179). The two German destroyers 4,000yd ahead sat broadside on with all their guns able to fire at Warburton-Lee's ships. Initially, *Havock* was the only other ship that could properly see their new adversaries through the smoke. Korvettenkapitän Wolff, the captain of *Georg Thiele*, had steamed out of Ballangen Fjord at 0550hrs with *Bernd von Arnim* 1,000yd behind. The first salvo from *Georg Thiele* landed either side of *Hardy* before the British crew, with the focus on Bey's ships behind, could reply to this new target forward, and hits were registered with the third salvo.

On *Hardy*, Able Seaman Gunner Geoff Bailey on No. 2 gun was thrown against the gun shield; his face was injured and one hand was shattered (Cope 2015: 183). Walter Mitchell was a gunner on No. 3 gun when two shells in quick succession killed or wounded his other crew members, disabling the gun. Stan Robinson later spoke highly of the Germans' accuracy, noting that they always registered a hit by the third salvo (Cope 2015: 186). Able Seaman Gunner Dougy Bourton described how they made smoke in an effort to provide cover, but the Germans continued to hit *Hardy*, which was slowly moving to port (Cope 2015: 183). A white-smoke float was ordered put out on the stern; mingling with black smoke from the funnels, the mixed smoke would stay closer to the surface and provide better cover.

Hardy had initially replied by turning to port and opening fire on *Georg Thiele* with the aft guns. The last signal Warburton-Lee sent, at 0556hrs, was 'Keep on engaging the enemy' and was probably intended to ensure that Bey's destroyers were targeted; however, they represented less of a threat. Stanning described the decisive moment, when there was a large explosion on *Hardy*'s bridge; thrown into the air, he landed on the gyrocompass binnacle (Cope 2015: 180). There were few survivors among those on the bridge. Warburton-Lee, by the Asdic, had both legs crushed and a bad head wound; he lay mortally wounded. Both compasses were broken and the chart table was destroyed. Stanning slid down to the wheelhouse and found the wheel abandoned; realizing that the ship was rapidly swinging to starboard, he turned the wheel to port (Cope 2015: 188). He was pleased to see Smale appear in the doorway. Smale took over steering; through the holes made by the enemy's shells he could see the five German ships, and that *Hardy*'s No. 1 and No. 2 guns were out of action, though some of the aft guns were still firing. Then a salvo seemed to hit the boiler and engine rooms as a cloud of steam was emitted. Another two guns had also gone out of action – No. 3 gun had taken a direct hit and No. 5 gun malfunctioned – leaving just No. 4 gun firing.

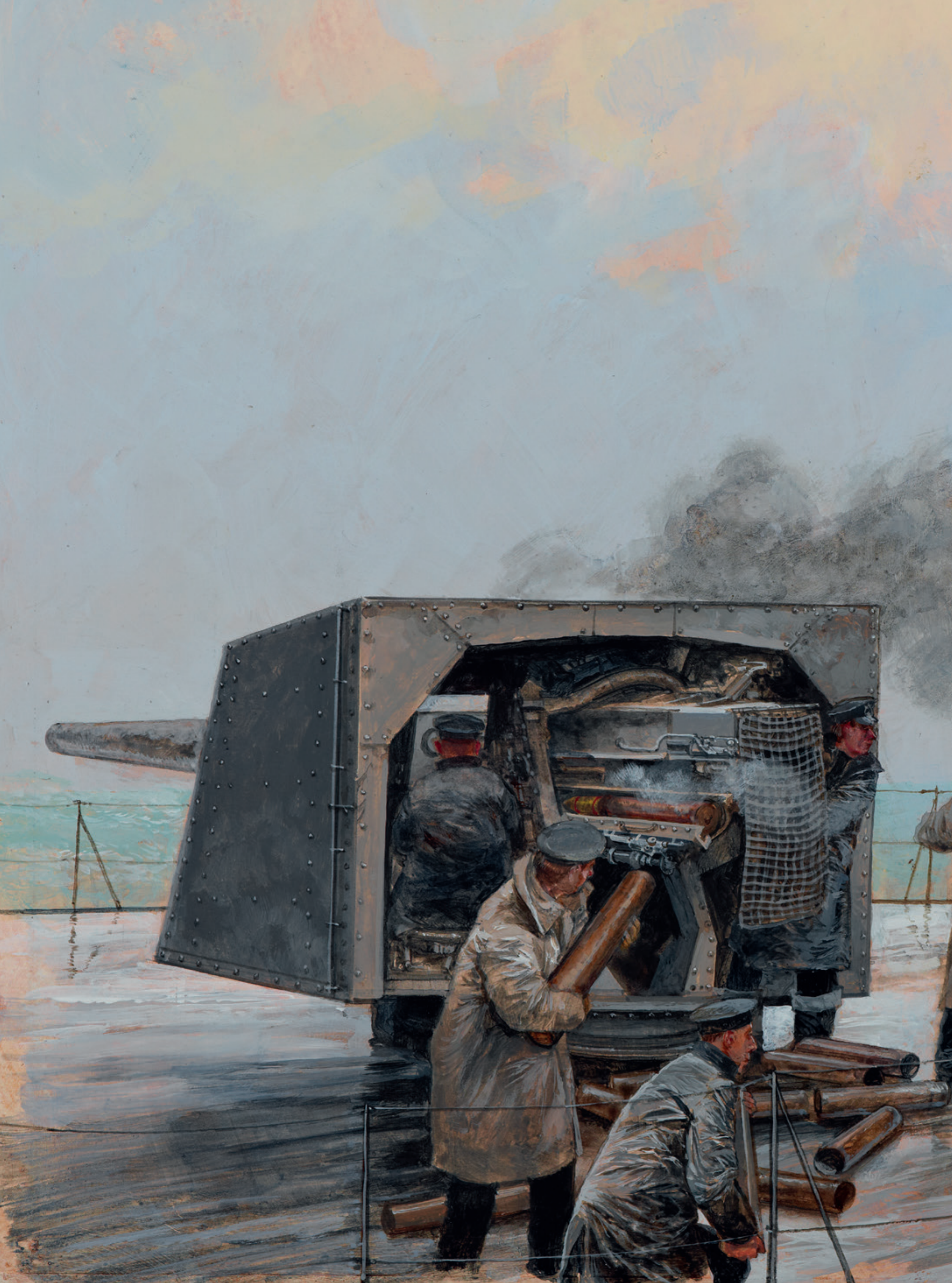
At least 12 hits were registered on *Hardy*. With the loss of steam, the dynamos stopped and the electrical system failed. The ship was slowing down and with thoughts of ramming gone, Stanning decided to beach the ship. Then Heppel appeared and a heated debate took place that resulted in his agreeing with Stanning's decision. Stanning ordered Smale to steer towards the shore after which Midshipman Pope appeared and pulled the levers to full astern, but this had no effect because of the hit on the boilers. Mansell recalled how No. 4 gun kept on firing until its ammunition supply was depleted. Heppel fired the last torpedo to no avail. Mansell then gave the order to abandon ship. They were 2.7 miles east of Ballangen.

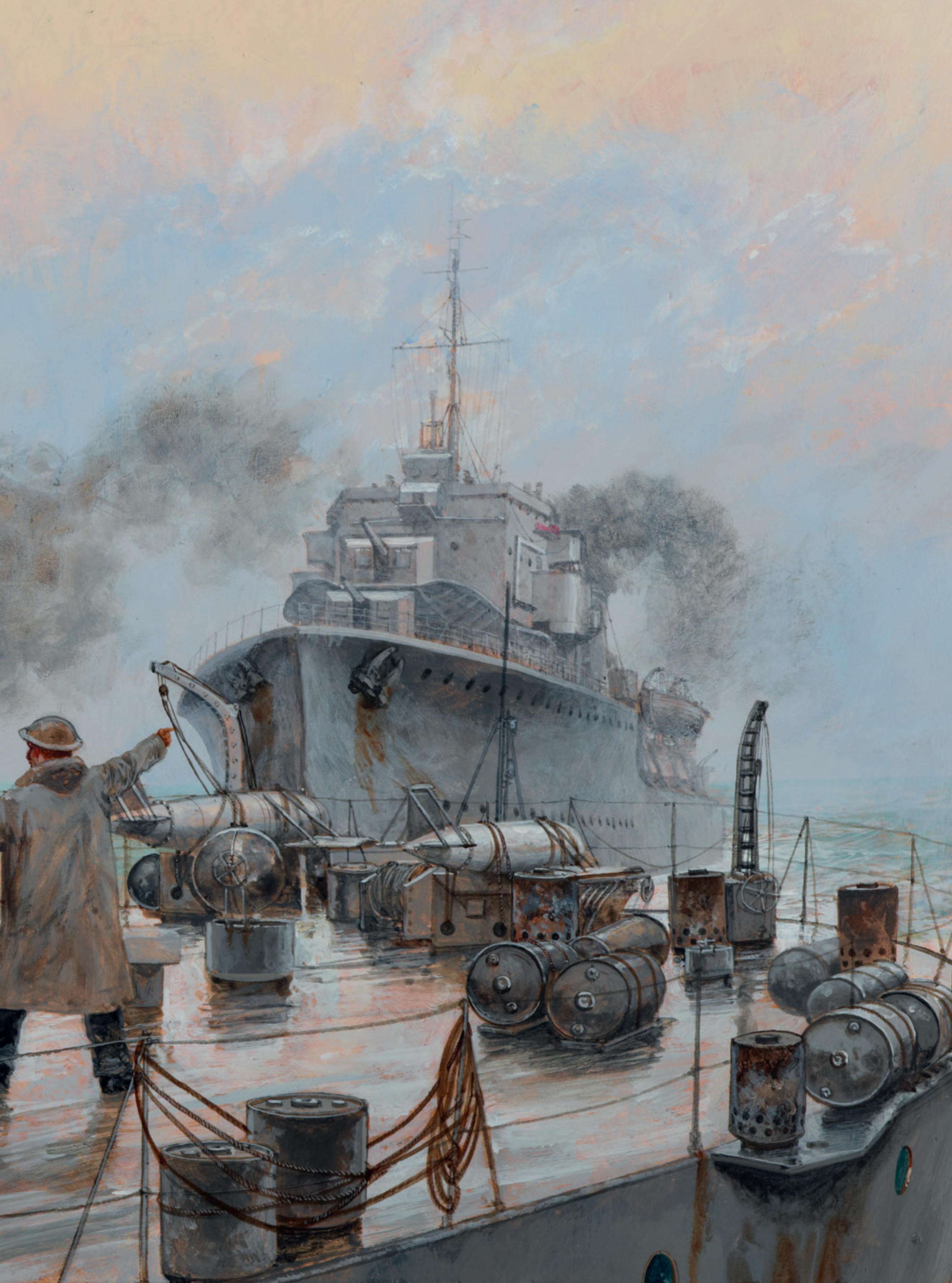
German fire switched to *Havock* and *Hostile*, but the ships took no serious hits. A shell landed near the ammunition locker on *Havock*, but failed to detonate and was thrown over the side. After evading two torpedoes from *Georg Thiele*, *Havock* fired three torpedoes from 3,000yd. Lieutenant John Burfield, the torpedo officer, had allowed the target a speed of 20kn, but the actual speed was 27kn and all the torpedoes missed astern. The other ships of the flotilla became aware of the two German destroyers forward. *Hostile* fired four torpedoes at *Bernd von Arnim* at 5,000yd, but all missed. *Hotspur* fired two torpedoes at *Georg Thiele*; they were avoided close to the stern. Smoke was hampering observation and few torpedo hits would be registered by either side.

Georg Thiele and *Bernd von Arnim* had steered around to move in parallel with the retreating British destroyers and a gunnery duel developed. *Georg Thiele* was hit in No. 1 boiler room and near the aft magazine, which had to be flooded. The forward gun crew were killed and the fire-control system was put out of action. Courage did not notice the Germans heading west and decided to take *Havock* back down the British line to see what had happened to *Hardy* and draw some fire. He observed *Hunter* on fire and slowing down, with *Hotspur* behind having steering problems. *Havock*'s forward guns momentarily malfunctioned and to fire at Bey's ships 10,000yd away with the stern guns, at 0605hrs he brought his ship in line heading west.

This movement may have deterred Bey, but the two German destroyers that presented the main threat were able to get ahead of the British line; they would close to 1,700yd to target *Hunter* with their main guns and also their anti-aircraft guns. Before this manoeuvre, *Georg Thiele* launched a salvo of three torpedoes at 3,060yd; Wolff recalled that the rightmost of the three hit *Hunter* in line with the bridge, immediately sinking the British ship (Cope 2018: 208). On the distance-measurement control with *Hunter* in his sights, Matrosenobergefreiter Alfred Eichholz had noticed the torpedo hit. The torpedo officer probably altered the depth settings after the initial salvoes had hit nothing. There are no British accounts of a torpedo hitting.

Hotspur, half a mile behind and going full speed ahead, could not avoid *Hunter* because a shell – probably fired from *Bernd von Arnim* – had burst below the bridge, severing the controls between the wheel and steering gear and breaking the telegraph. Layman could not steer or give orders to stop. Engine Room Artificer Percy Danby recalled the effects of the hit to No. 1 boiler room on *Hotspur*'s starboard side: the main switchboard and elements of the steering gear were destroyed and the deck was holed by shrapnel, meaning that seawater became mixed with the fuel-oil and the burners failed (Cope 2018: 211–12). No. 2 boiler had been knocked out by the shrapnel of another hit, and No. 1 and No. 3 boilers were using seawater; Danby would have to use boiler pressure to blow salt deposits into the sea, continuously for several hours, and use the boilers alternately to maintain speed.





PREVIOUS PAGES

It is around 0615hrs on a cold grey morning in Ofot Fjord, and the battle between Captain Warburton-Lee's flotilla of five destroyers and the German destroyer flotilla has been under way for over 90 minutes. Warburton-Lee's ships were withdrawing towards the mouth of Ofot Fjord when they were surprised by the German destroyers *Georg Thiele* and *Bernd von Arnim*, steaming out of Ballangen Fjord to the south. The Germans opened fire as the British destroyers headed towards them, wrecking the bridge of *Hardy* and leaving *Hunter* to bear the brunt of the German attack. *Hunter* quickly suffered severe damage from accurate gunnery and a likely hit by a torpedo from *Georg Thiele*; the crew of *Hunter*'s 'Y' turret are still working their gun despite the considerable damage their ship has sustained, as the fast-approaching bows of *Hotspur* bear down on them. *Hotspur* is temporarily out of control due to seven direct hits that have knocked out No. 2 boiler as well as all the electrical circuits; the ship is coming on at full speed ahead, straight towards *Hunter*'s position. Within seconds, the two ships will collide, damaging *Hotspur* but inflicting a devastating blow to *Hunter* that will soon send the ship to the bottom.

Aboard *Hotspur*, Layman could see *Hunter*, on fire and missing the forward torpedo tubes, lose steam just as *Hotspur*'s steering and communications were knocked out (Plevy 2008: 123). A shell landed on the bridge from which Layman had recently departed to give verbal orders to the engine room from the engine-room hatch near the 'X' gun deck. Then *Hotspur*'s bow cleaved into *Hunter*'s hull and forward momentum spun them slowly around. Layman passed orders to the tiller in the stern and disentangled his ship from the sinking *Hunter* while under heavy fire from German destroyers (Plevy 2008: 123). At 0600hrs, the order to abandon ship was given on *Hunter*. Depth charges went off on board. All the lifeboats were smashed and there was no room on the Carley floats. Sailors went over the side and clung to whatever was available in an effort to stay afloat. By 0615hrs, *Hunter* was abandoned; 48 survivors were hoisted aboard *Erich Giese* and *Wolfgang Zenker*.

Korvettenkapitän Wolff, the captain of *Georg Thiele*, described how the firing of all his guns had started at 4,375yd and *Hardy* was hit with the third salvo; two torpedoes were also launched by *Georg Thiele* at *Havock* but missed, with the German ship in turn avoiding two torpedoes that detonated on the shore. Wolff reported avoiding a British triple salvo of torpedoes (probably from *Havock*) and a single torpedo from another unidentified British ship at the beginning of *Georg Thiele*'s engagement with *Hunter*. British gunfire led to No. 1 boiler room being shut down due to oil leaks that were a fire risk. A shell hit near the ammunition storage room and caused a minor fire with heavy smoke. Another torpedo was fired by *Georg Thiele*, but missed. A hit on the No. 1 gun pivot killed the crew and a shell landing on the signal deck damaged the port side of the bridge. The stokers' mess deck was hit and the gun control put out of action. Wolff stated that the German guns were able to maintain their fire as the height and direction was set by telephone instead (Cope 2018: 208). Both ammunition storage areas were flooded; thick smoke resulted from fires that were difficult to control as the shutting down of No. 1 boiler room had affected the use of seawater for fire-fighting purposes. Then *Georg Thiele* fired its last salvo of three torpedoes at *Hunter*, with one hitting. *Georg Thiele* then narrowly avoided another single torpedo and three others, likely from *Hostile*. Three NCOs and 12 sailors were killed aboard *Georg Thiele*, and one officer, five NCOs and 17 sailors wounded.

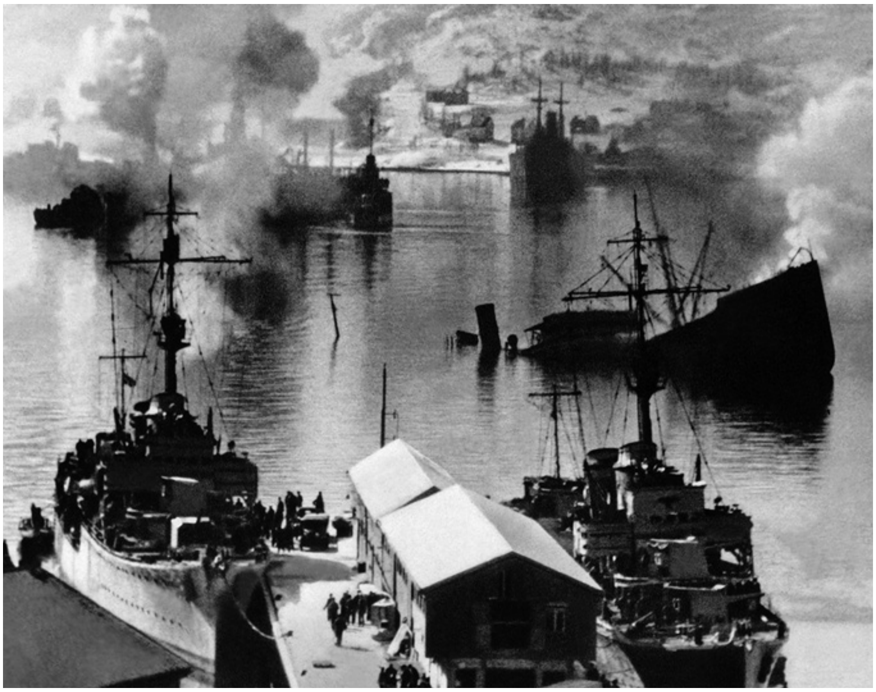
Some of the men who jumped from *Hardy* had begun to swim; others launched the two lifeboats not already smashed to pieces, and the Carley floats. Shells were still landing on the ship, causing further casualties, but the firing stopped for a time when Bourton hauled down the battle ensign on the stern. German firing recommenced as one of *Hardy*'s turrets was still in action. The skimmer that was going to take Warburton-Lee ashore was destroyed and the chief stoker was mortally wounded. Another boat capsized because there were too many sailors on board. Cope was going to use the port whaler, but observed how the boat was lowered stern first and crashed into the water. The boat soon sank, spilling the occupants – including wounded – into the water, and he had to swim about 300yd to shore, but could wade some of the way; once ashore the survivors were helped by Norwegian civilians. Cope observed the officers lowering Warburton-Lee into the water, but the mortally wounded captain probably did not make it there alive.

Targeted by both Berger's and Bey's ships, *Hotspur* was vulnerable. Leading Seaman Watling, on *Hotspur*'s No. 1 gun, was firing at *Bernd von Arnim* over open sights from

2,000yd. Boiling water was poured over the shells to ensure the breech closed when they were loaded. Hit seven times, *Bernd von Arnim* retired. *Hostile* and *Havock* had veered around the pile-up and were 2 miles away when they observed *Hotspur* emerge from the smoke and went to assist; their return, Layman thought, probably dissuaded the German destroyers from following. Worried about his lack of fuel, Bey stood off to fire at long range; his ships were less than 5,000yd from *Hotspur* as the two other British ships arrived, but Bey – worried about British torpedoes – made a zigzag approach, delaying his ships and making gunnery difficult. *Erich Giese* was short on fuel. *Wolfgang Zenker* fired at *Hardy* and only *Erich Koellner* went further. The battle ended at 0630hrs with all German destroyers retiring. The British lost 147 dead and the Germans 176.

Warburton-Lee could have waited for reinforcements before attacking, but Whitworth did not send any ships and did not liaise with him. When he heard reports from Warburton-Lee of the strength of the enemy, at 0600hrs Whitworth had ordered the light cruiser *Penelope* and his other destroyers into Vest Fjord to support Warburton-Lee's flotilla. *Greyhound* was closest and encountered the retreating British destroyers off Tranoy at 0930hrs. Wright and Courage wanted to go back into Ofot Fjord and destroy the remaining German destroyers, but Captain Gerald Yates on *Penelope* refused. A repair facility and refuelling anchorage was established at Skjelfjorden in the Lofoten Islands, where the damaged British ships retreated.

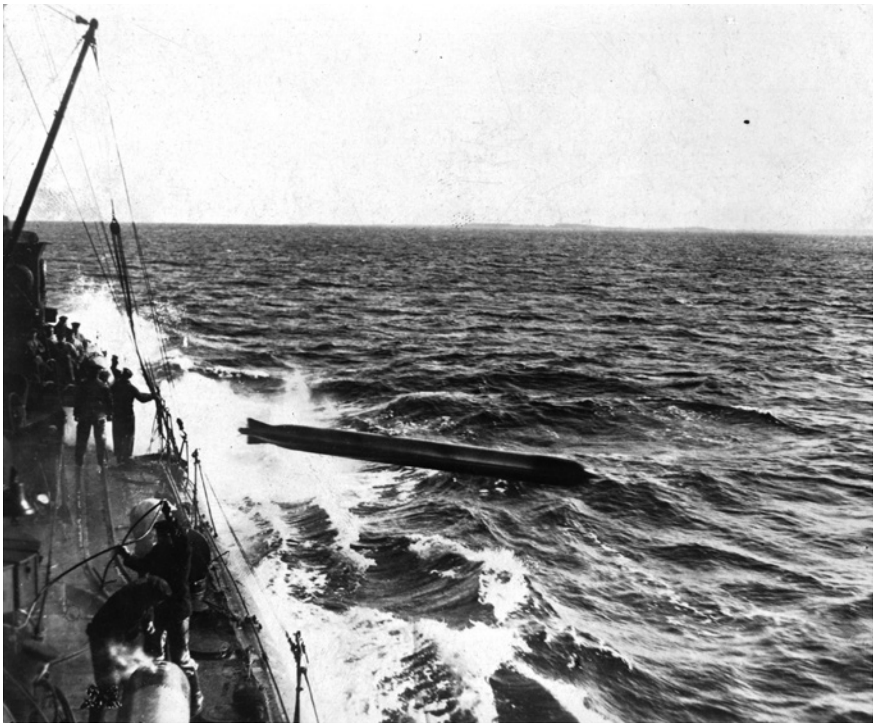
The First Lord of the Admiralty, Winston Churchill, inspecting the surviving sailors of *Hardy* on Horse Guards Parade after the crew had distinguished themselves in the fighting in Norway, April 1940. The crew of *Hardy*, beached near Vidrek, had to abandon ship. Lieutenant Geoffrey Stanning, the paymaster on *Hardy*, did not want to jump into the freezing sea, but was surprised that within 50yd of the ship he could start wading. Of the crew of 175, 140 got ashore, 27 of them seriously wounded. The survivors made their way to Ballangen and the wounded were taken into hospital there. Others took refuge in the school. Refloated by a rising tide, *Hardy* capsized and the wreck remained visible for more than 20 years after the battle. (Popperfoto/Getty Images)



On 10 April, the 2nd Destroyer Flotilla had sunk two destroyers, *Wilhelm Heidkamp* and *Anton Schmitt*, heavily damaged *Diether von Roeder* and inflicted lesser damage on *Georg Thiele* and *Bernd von Arnim.* As the flotilla was withdrawing, the ammunition ship *Rauenfells*, carrying 12.7cm shells for the destroyers, was intercepted at the entrance to Ofot Fjord. Bonte had failed to send an escort to ensure the safe arrival of the supply ship. (*U 25* had actually misidentified the merchant ship and a torpedo fired from the U-boat had missed at Baroy.) *Hostile* opened fire and the crew of *Rauenfells* abandoned ship. A boarding party from *Havock* with torpedo officer Lieutenant John Burfield in charge reached *Rauenfells*, but was hurriedly ordered off. Some ammunition ignited, starting fires, but the crew returned, regained control and beached the ship. The Norwegians captured the crew and salvaged what they could of the cargo. Eight merchant ships were also sunk in Narvik harbour, but not the oiler *Jan Wellem*, which soon started to refuel destroyers. Here, *Hans Lüdemann* and *Hermann Künne* are pictured at the pier, unloading wounded. (Galerie Bilderwelt/Getty Images)

At 1300hrs on 10 April, Whitworth was ordered to prevent a German escape from Narvik and told Yates to prevent any ships from reaching Narvik; that evening, Churchill instructed Yates to attack if he thought the situation was justifiable. In his reply, Yates stated that the attack order was justifiable although the element of surprise was lost and that navigation would be dangerous due to the wrecks of the ships that had been sunk, making a successful night attack impossible (MacIntyre 1959: 88). He did not agree to a day attack because he believed that it was impossible to disseminate orders for the following day with the destroyers disposed as they were (Macintyre 1959: 88). At 1900hrs, *U 25* fired two torpedoes at *Eskimo* and *Bedouin*, but they detonated prematurely. Commander James McCoy, the captain of *Bedouin*, thought there was an electrically operated minefield off Baroy and told Yates that an attack was no longer feasible (Macintyre 1959: 90). At 0930hrs on 11 April, Yates signalled that *Bedouin*'s officers thought that an attack based on the previous day's pattern could not be carried out successfully. Instead, Yates proposed an attack on 12 April.

On the evening of 10 April, Bey had only *Wolfgang Zenker* and *Erich Giese* ready to attempt a break-out. The snow had stopped and visibility was good. At 2045hrs, Bey observed *Penelope* off Tranoy and withdrew. He could have kept close to the shore in order that the outline of his ships merged with the shore. The British had no radar to detect him. *Erich Koellner*, *Hermann Künne* and *Hans Lüdemann* were also ready by the next day, but Bey signalled that a break-out could not be achieved; he had given up any hope of escaping. During the night of 11/12 April, while manoeuvring in Narvik harbour, *Erich Koellner* and *Wolfgang Zenker* ran aground. With damaged propellers, *Wolfgang Zenker* was restricted to a speed of 20kn. *Erich Koellner* was much more badly damaged and could only make 7kn.



A torpedo is launched from a German destroyer during manoeuvres in the North Sea. After the mauling the Germans had received on 10 April, Bey had to repair the damage to his destroyers and prepare for an attack. *Diether von Roeder* remained tied up in Narvik harbour and everything except the two forward guns and 25 men was taken off the ship. With its torpedoes removed and distributed to other ships, *Erich Koellner* was to tie up by a pier 3 miles east of the Ramnes Narrows and use camouflage to prepare an ambush with guns. *Hans Lüdemann* had four torpedoes remaining, but had lost a gun. *Wolfgang Zenker* had eight torpedoes; *Erich Giese* had the same, but leaking boiler tubes restricted its speed. *Bernd von Arnim* had six torpedoes loaded on and five boilers that could achieve 33kn. *Georg Thiele* had four boilers that could produce 27kn for brief periods, local fire control and six torpedoes. *Hermann Künne* was the only fully operational destroyer. (© Hulton-Deutsch Collection/CORBIS/Corbis via Getty Images)

The British were also having their problems, with *Penelope* accidentally hitting rocks near Bodø, having been sent there following erroneous information that a German supply ship was in the area (*Alster* had already been intercepted by the British destroyer *Icarus*). This delayed the attack planned for 12 April and would have assisted a break-out attempt by Bey if he had known, but other British ships were approaching and the Germans were firmly on the defensive.

THE SECOND BATTLE OF NARVIK

The British realized that *Scharnhorst* and *Gneisenau* were returning home and that they were free to retake Narvik. Forbes had met up with Whitworth and wanted to wait for the land forces to arrive before mounting an attack, but was ordered to employ surface ships – a battleship, escorted by destroyers – in combination with dive-bombers to attack German ships and coastal batteries in Narvik (Dickens 1974: 108). Whitworth was told that the risk from U-boats should be slight. On 12 April, nine Swordfish torpedo bombers flew 150 miles and attacked Narvik, but with no result as this was the pilots' first attack and they lacked maps with contours. The weather closed in and the second squadron was forced to return to the carrier *Furious*.

On 13 April, Whitworth was sent into Ofot Fjord with the battleship *Warspite* and nine destroyers: four Tribal-class ships (*Bedouin*, *Cossack*, *Punjabi* and *Eskimo*) and five others (*Kimberley*, *Hero*, *Icarus*, *Forester* and *Foxhound*). Whitworth was told to clear the minefield thought to be off Baroy; his orders stressed the

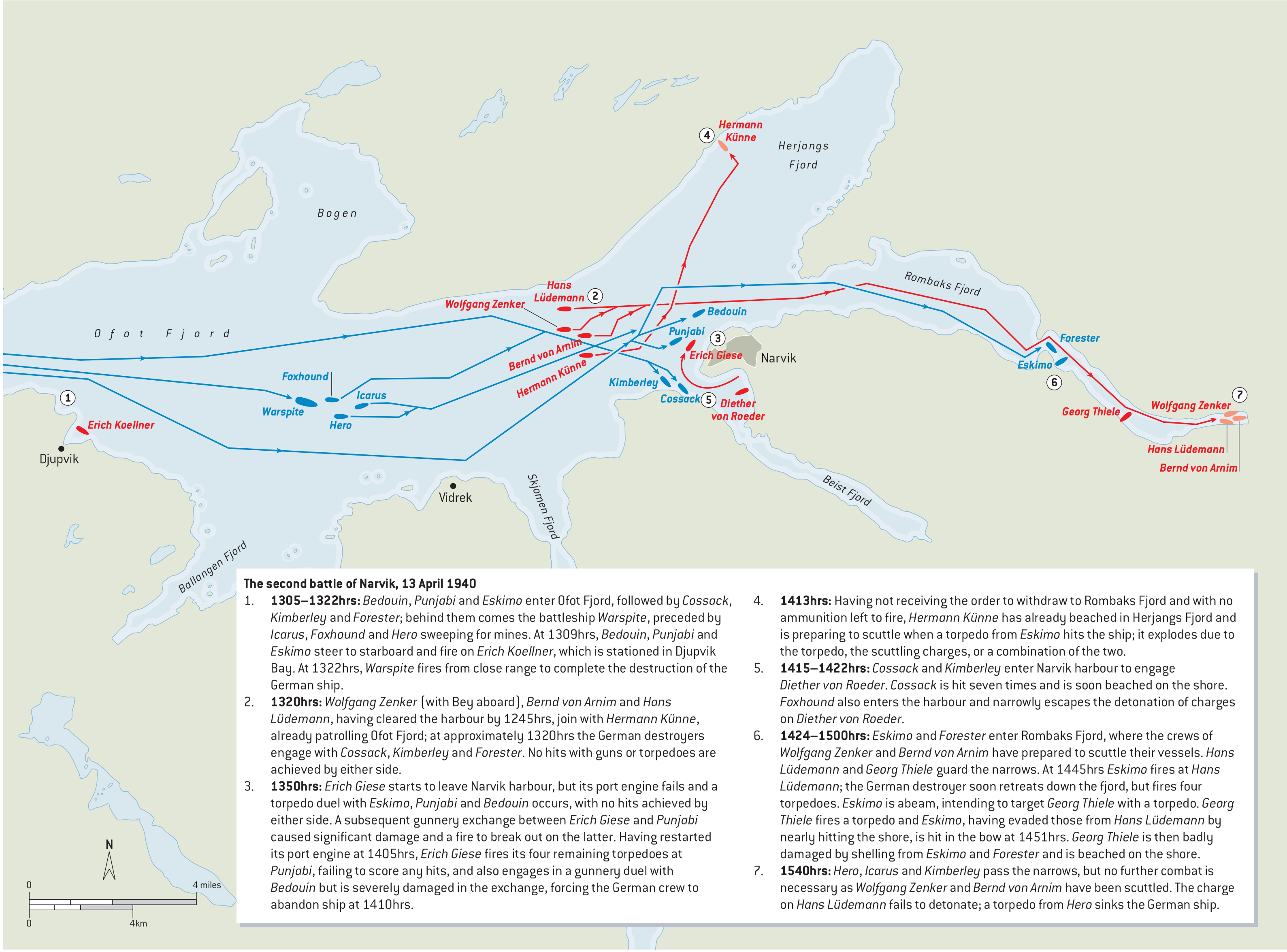
A view down the length of Rombaks Fjord, scene of the 13 April battle, taken by a German photographer in 1942. Once the remnants of the German destroyer force had retreated into the depths of the fjord, there was no possible escape – all they could hope for was to inflict damage on the British ships pursuing them. (NH 71404 courtesy of the Naval History & Heritage Command)

importance of engaging enemy destroyers before they could attack *Warspite* with torpedoes. The battleship was to approach to within 5 miles of Narvik; once in position, *Warspite* was to cover the destroyers' advance into the harbour (Dickens 1974: 112–113). Whitworth ordered that the fjord north of Narvik was to be cleared before British ships entered the harbour. Only one U-boat was thought to be in the area, but in reality there were five: *U 48* off Tranoy, *U 46* off Baroy and Ramnes, *U 25* at Lilandsgrund, *U 51* in the harbour and *U 64* anchored at the head of Herjangs Fjord. If this had been known, *Warspite* would probably not have entered the fjords.

Bey wanted to disperse his destroyers in the fjords, and at 1030hrs ordered steam raised, but they were slow to move off, with six still being in the harbour and delayed because of problems with boilers. *Hermann Künne* was escorting *Erich Koellner* to an ambush position at Taarstad when the British flotilla entered Ofot Fjord.

At 1030hrs, Whitworth was 30 miles from Ofot Fjord and had *Icarus*, *Foxhound* and *Hero* leading minesweeping operations that would safeguard a channel wide enough for *Warspite*, but not the other destroyers that were tasked to provide an anti-submarine screen. At 1040hrs, Whitworth was passing Tranoy when *Eskimo*, sent ahead to Baroy, detected *U 48* and depth-charged the U-boat to allow *Warspite* to pass safely. On passing Baroy, Commander McCoy, captain of *Bedouin* and in command of all the destroyers, ordered that *Bedouin*, *Punjabi* and *Eskimo* proceed to the van; *Cossack*, *Kimberley* and *Forester* were to form astern of *Eskimo*. If enemy warships were in Herjangs Fjord then the leading ships should attack, and the rear ships use their discretion to decide when to assault the harbour. *Bedouin*, *Punjabi* and *Eskimo* would move to starboard and *Cossack*, *Kimberley* and *Forester* to port, 3 miles ahead of *Warspite*. At Baroy, *U 46* noticed Whitworth and was about to fire

OPPOSITE
The second battle of Narvik, 13 April 1940.


Hermann Künne
④
Herjangs Fjord
Bogen
Hans Lüdemann ②
Wolfgang Zenker
Bedouin
Punjabi ③
Erich Giese
Narvik
Rombaks Fjord
Forester
Eskimo ⑥
O f o t F j o r d
Bernd von Arnim
Hermann Künne
Foxhound
Icarus
Warspite
Hero
Kimberley
Cossack ⑤
Diether von Roeder
Georg Thiele
Wolfgang Zenker ⑦
Hans Lüdemann
Bernd von Arnim
①
Erich Koellner
Djupvik
Vidrek
Skjomen Fjord
Beist Fjord
Ballangen Fjord
N
0
4 miles
0
4km

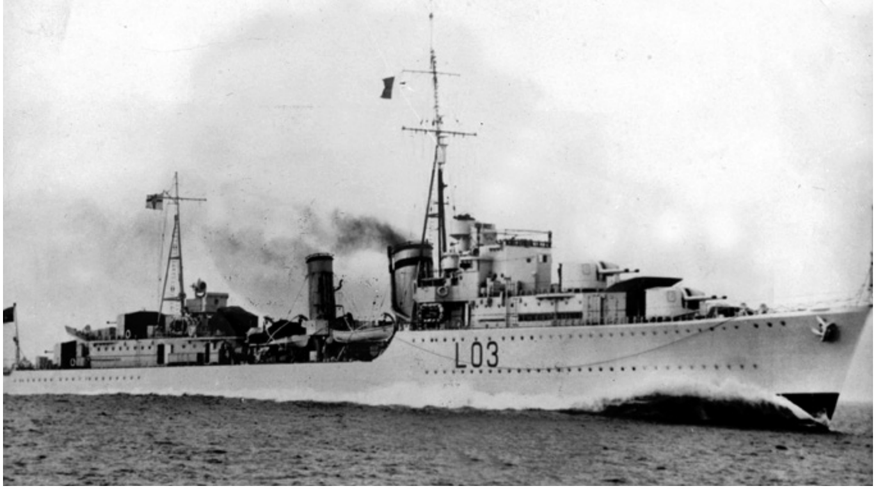
The second battle of Narvik, 13 April 1940

1. **1305–1322hrs:** *Bedouin*, *Punjabi* and *Eskimo* enter Ofot Fjord, followed by *Cossack*, *Kimberley* and *Forester*; behind them comes the battleship *Warspite*, preceded by *Icarus*, *Foxhound* and *Hero* sweeping for mines. At 1309hrs, *Bedouin*, *Punjabi* and *Eskimo* steer to starboard and fire on *Erich Koellner*, which is stationed in Djupvik Bay. At 1322hrs, *Warspite* fires from close range to complete the destruction of the German ship.
2. **1320hrs:** *Wolfgang Zenker* (with Bey aboard), *Bernd von Arnim* and *Hans Lüdemann*, having cleared the harbour by 1245hrs, join with *Hermann Künne*, already patrolling Ofot Fjord; at approximately 1320hrs the German destroyers engage with *Cossack*, *Kimberley* and *Forester*. No hits with guns or torpedoes are achieved by either side.
3. **1350hrs:** *Erich Giese* starts to leave Narvik harbour, but its port engine fails and a torpedo duel with *Eskimo*, *Punjabi* and *Bedouin* occurs, with no hits achieved by either side. A subsequent gunnery exchange between *Erich Giese* and *Punjabi* caused significant damage and a fire to break out on the latter. Having restarted its port engine at 1405hrs, *Erich Giese* fires its four remaining torpedoes at *Punjabi*, failing to score any hits, and also engages in a gunnery duel with *Bedouin* but is severely damaged in the exchange, forcing the German crew to abandon ship at 1410hrs.
4. **1413hrs:** Having not receiving the order to withdraw to Rombaks Fjord and with no ammunition left to fire, *Hermann Künne* has already beached in Herjangs Fjord and is preparing to scuttle when a torpedo from *Eskimo* hits the ship; it explodes due to the torpedo, the scuttling charges, or a combination of the two.
5. **1415–1422hrs:** *Cossack* and *Kimberley* enter Narvik harbour to engage *Diether von Roeder*. *Cossack* is hit seven times and is soon beached on the shore. *Foxhound* also enters the harbour and narrowly escapes the detonation of charges on *Diether von Roeder*.
6. **1424–1500hrs:** *Eskimo* and *Forester* enter Rombaks Fjord, where the crews of *Wolfgang Zenker* and *Bernd von Arnim* have prepared to scuttle their vessels. *Hans Lüdemann* and *Georg Thiele* guard the narrows. At 1445hrs *Eskimo* fires at *Hans Lüdemann*; the German destroyer soon retreats down the fjord, but fires four torpedoes. *Eskimo* is abeam, intending to target *Georg Thiele* with a torpedo. *Georg Thiele* fires a torpedo and *Eskimo*, having evaded those from *Hans Lüdemann* by nearly hitting the shore, is hit in the bow at 1451hrs. *Georg Thiele* is then badly damaged by shelling from *Eskimo* and *Forester* and is beached on the shore.
7. **1540hrs:** *Hero*, *Icarus* and *Kimberley* pass the narrows, but no further combat is necessary as *Wolfgang Zenker* and *Bernd von Arnim* have been scuttled. The charge on *Hans Lüdemann* fails to detonate; a torpedo from *Hero* sinks the German ship.

Warspite was preceded by destroyers ordered to clear mines. Here, *Hero* and *Foxhound* are approaching Djupvik with the starboard division of Tribal-class destroyers – *Bedouin*, *Punjabi* and *Eskimo* – close to the south shore behind them. This photograph was taken from a Swordfish by Leading Airman Maurice Pacey; he was also responsible for the radio. (© IWM A 33)

from 650yd when a rock on the seabed that was not on the charts forced the U-boat to rise.

Fairey Swordfish floatplanes from *Warspite* looked for the enemy, paying particular attention to the side fjords (Dickens 1974: 119). Each aircraft carried two 250lb HE bombs, eight 40lb anti-personnel bombs and two 100lb anti-submarine bombs. The aircraft launched at 1152hrs and observed *Hermann Künne*, 12 miles ahead of *Warspite*, at 1203hrs. The crew of the German destroyer raised the alarm and Bey ordered all ships to sail from the harbour. At 1215hrs, the Swordfish spotted *Hans Lüdemann*, the first of the German ships to get going from the harbour, as well as *U 64*, which was anchored on the surface in Herjangs Fjord as Bey had not told the U-boat's captain of the impending attack. At 1230hrs, one of the aircraft dived at 50° from 1,000ft and released two 100lb bombs at 200ft, one of which hit and sank the U-boat. At 1236hrs, the Swordfish then reported to *Warspite* over the Air Reconnaissance Wave broadcast frequency that *Erich Koellner* was in Djupvik Bay, where the ship had taken refuge when the crew noticed the British flotilla.



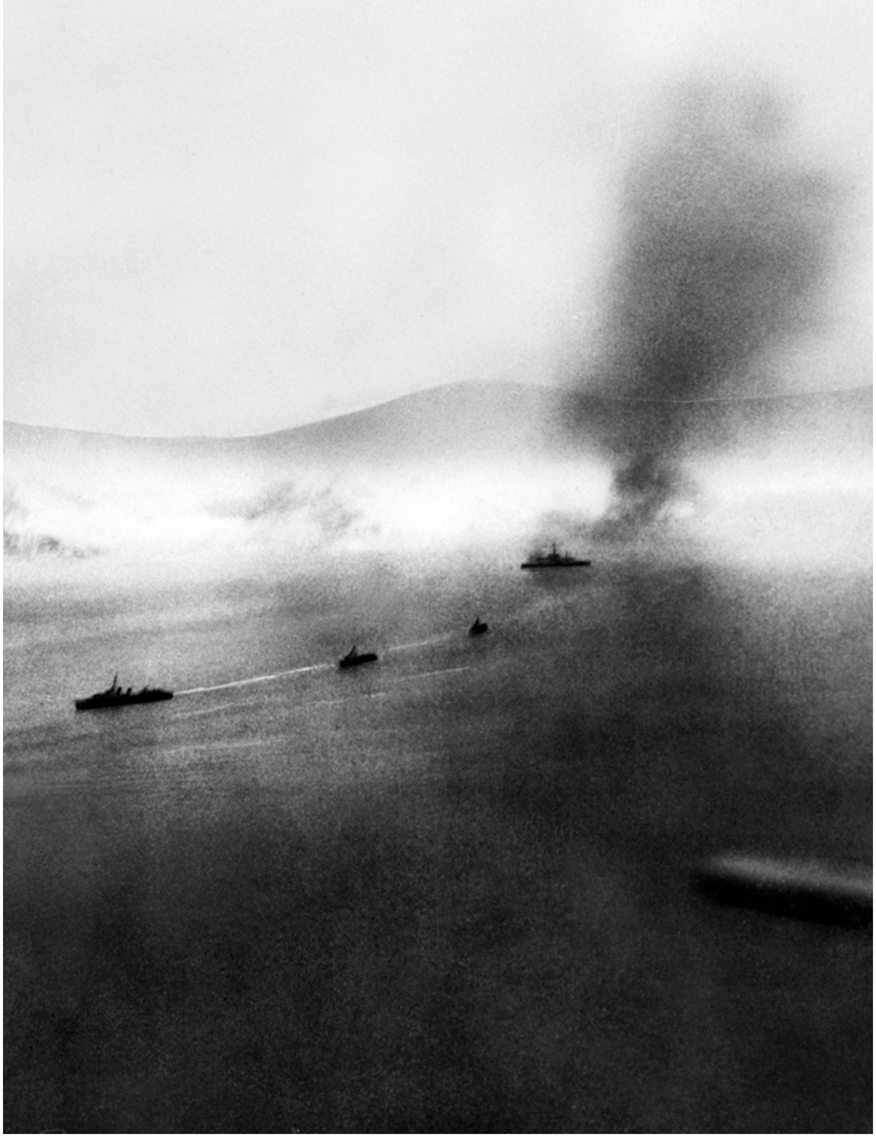
A fine view of the Tribal-class destroyer *Cossack*, 1940. By the time of *Cossack*'s involvement in the second battle of Narvik, the ship was already well known, having rescued 300 British merchant seamen who were being held prisoner on board the German supply ship *Altmark* in Jøssing Fjord, Norway. (Haynes Archive/Popperfoto/Getty Images)

A Fairey Swordfish floatplane returns to the battleship *Malaya* and is hoisted aboard, October 1941. *Warspite*'s Swordfish (up to four could be carried, but two was the usual complement) played an active role in the 13 April battle, first sinking U-boat *U 64* with a 100lb bomb and then providing vital reconnaissance to the British force on the dispositions and subsequent movements of the German destroyers. (Lt C.H. Parnall/IWM via Getty Images)

By 1245hrs, Bey – on *Wolfgang Zenker*, with *Bernd von Arnim* and *Hans Lüdemann* – had got clear of the harbour. Tightly packed in, the British ships were following a steady course up the fjord; the Germans had room to zigzag. The British would only be able to fire their forward guns, but because the Tribals had twin mountings this did not unduly affect them. The Germans could fire all their guns, but their frequent changes in course affected their aim.

Bedouin, *Punjabi* and *Eskimo* were told about *Erich Koellner* in Djupvik Bay; *Warspite*'s patrolling Swordfish was ordered to observe the ship at 1300hrs. At 1309hrs, at a range of 3,800yd, *Bedouin* was the first to fire on the German ship, followed by the others; the guns hit a turbine and boiler room and two of five torpedoes launched hit *Erich Koellner*'s bow. The German ship fired a single salvo and two torpedoes at less than 1 mile; these missed. At 1322hrs, *Warspite* on passing fired a broadside of 18 15in shells from 3,600yd; although the shells passed through *Erich Koellner* without detonating, the ship was soon a burning wreck and with its ammunition all gone, the crew using a depth charge to scuttle the ship.

At 1319hrs, *U 25* fired two torpedoes at *Cossack* at 800yd, but they failed to hit, after which the U-boat headed west. At approximately the same time *Cossack*, *Kimberley* and *Forester* were taking on *Wolfgang Zenker* and *Bernd von Arnim*. *Wolfgang Zenker* fired four torpedoes that went past *Warspite*'s port side. A torpedo detonated on shore close to the ship's stern and a further torpedo blew up on a rock close to the ship. At 1330hrs, *Hermann Künne* joined *Wolfgang Zenker*, *Bernd von Arnim* and *Hans Lüdemann*; the German destroyers started to withdraw to the entrance to Herjangs



Hermann Künne was seen by *Warspite* and at 1259hrs fired on from 21,500yd with 19 rounds, but no hits were laid on the destroyer. *Warspite*'s 'B' turret guns filled 'A' turret guns with smoke and at 1306hrs, the aim had to be shifted; 12 rounds were fired, but all fell short, and then eight rounds – also falling short – at another destroyer. The rate of fire was low, further reduced because smoke over the bow obscured observation. The fire from the battleship was ineffective and clouds of snow were dislodged from the hill sides. Here, in a photograph taken from a Swordfish, *Warspite* is shown firing; there are three destroyers ahead of the battleship. (© IWM A 39)

Fjord, where they were joined by *Georg Thiele*. Ten Swordfish from the carrier *Furious* conducted a torpedo attack, but hit no targets; two of the aircraft were lost to enemy fire.

Wolfgang Zenker fired its last four torpedoes to no effect. *Bernd von Arnim* was straddled by *Warspite*'s shelling, but not hit. The southern British destroyer group was getting ahead of the other. No hits were registered by either side – the German guns were useless at ranges greater than 5,000yd – and *Warspite* made 10kn up the fjord. *Bernd von Arnim* made a dash forward and fired six torpedoes; all missed and one ran underneath *Cossack*. *Georg Thiele* fired four torpedoes, all of which missed. The Swordfish were able to give warning of the tracks of torpedoes they were observing from the air.

At 1350hrs, as *Erich Giese* started to leave the harbour, *Wolfgang Zenker* and *Bernd von Arnim* – with no ammunition remaining – were ordered by Bey over voice radio to Rombaks Fjord to be scuttled. Together with *Hans Lüdemann* and *Georg Thiele*, they formed a column and entered the fjord. *Georg Thiele* used smoke floats to cover the withdrawal. *Eskimo* was pursuing *Hermann Künne*, which had not received the order to retreat; *Erich Giese*'s port engine failed in the harbour entrance, but the German ship decided to fire four torpedoes at *Eskimo* as it passed, though they all missed because the aim-off angle (the degree to which the torpedo tubes have to anticipate the track of the target) was too high. *Bedouin* responded with three torpedoes and *Punjabi* fired two; all missed. Together with *Diether von Roeder*, the German ship now concentrated its fire on the nearest Royal Navy ship, *Punjabi*. On *Punjabi*, the fire-control room was wrecked and the ready ammunition locker was destroyed; a watertight bulkhead shattered, flooding a magazine; a store-room fire required another magazine to be flooded; and a motor boat blew up, with shell splinters getting into the engine room and cutting a steam line, filling the room with steam.

Erich Giese got its port engine working once more and could have retreated into the safety of the harbour, but decided to move forward at 1405hrs. The German

On *Erich Koellner*, 70 of the crew were killed or wounded in Djupvik Bay. The destroyer was in a vulnerable position, not within supporting distance of any other ship, and achieved nothing. The crew had wanted to get their guns ashore, but this was vetoed by Fregattenkapitän Erich Bey; they were in the process of removing equipment to build a shore battery when Bey ordered everything returned, a decision that Kapitänleutnant (Ing.) August Wilhelm Heye, the chief engineer, described as incomprehensible. Bey intended to use the ship for advanced gunnery observation, but fire control was not working; better, Heye thought, if all the torpedoes were retained and used to ambush enemy destroyers. Here, the wreck of *Erich Koellner* is visible from a Swordfish. (Keystone-France/Gamma-Keystone via Getty Images) destroyer fired four torpedoes at *Punjabi*; the British ship's captain, Lieutenant Commander Ralph Shorto, avoided them with port propeller full astern and they passed clear of the starboard side, but the damage done already to *Punjabi* by shells and fires on board was enough to persuade Shorto to retreat. *Bedouin* decided to close to 1,000yd and pummelled *Erich Giese* before pressing on to Rombaks Fjord; Korvettenkapitän Karl Smidt had fired all his ammunition before ordering the ship abandoned at 1410hrs. He had no power and *Erich Giese* was hit three times by shells from *Warspite* at 10,000yd and 18 times by destroyers. Meanwhile, *Eskimo* with *Forester* in support had continued in pursuit of *Hermann Künne*, but Korvettenkapitän Friedrich Kothe beached his ship in Herjangs Fjord and the crew escaped with no casualties. Demolition charges were laid and triggered, but *Hermann Künne* also suffered a torpedo hit from *Eskimo*, the German ship exploding from one or both causes at 1413hrs.

Believing *Diether von Roeder* to be a shore battery, *Warspite* fired at the German destroyer, but missed. A Swordfish reported the presence of a German destroyer in the harbour. *Cossack* closed to within 2,000yd of *Diether von Roeder*, lying along a pier; but as the British destroyer did so, it inadvertently shielded the German ship from *Warspite*'s guns. Commander Robert Sherbrooke, *Cossack*'s captain, had been told to go after the destroyers and leave the shore batteries to *Warspite*, but had disobeyed and entered the harbour with *Kimberley* at 1415hrs. *Cossack* was abeam and presented a larger target than *Diether von Roeder* stern on. *Cossack* fired first, but missed. Starting

On 13 April, Korvettenkapitän Karl Smidt, the captain of *Erich Giese*, could either destroy his ship in harbour and save his crew, or go out and fight. Here, in a photograph taken from a Swordfish, *Erich Giese* is shown badly damaged. The ship sank the next morning, 14 April. (© IWM A 21)

at 1420hrs, seven hits were then inflicted on *Cossack* in two minutes. A shell hit a boiler room, severing the leads from the bridge to the steering engine and fracturing some steam pipes. The engines could not be stopped and with no steering, the ship ran aground on the south shore; the stern guns could still fire under local control (the fire control had been hit and knocked out), as could the 'pom-poms'. *Cossack* had nine killed and 21 wounded.

The 25 men on *Diether von Roeder* left their ship as the ammunition was used up; three men stayed to light the 9-minute fuse to charges in order to scuttle their ship. *Cossack* observed that the ship was no longer firing and ordered *Foxhound* in; the latter ship closed to 50yd and was about to go alongside when the three crew with Obermaat Tietke in command were seen disembarking hastily on to the shore. Soldiers started to fire small arms. This persuaded *Foxhound* to stand off and thus the ship was not damaged by the detonations from the scuttling charges when they went off. *Cossack* was not able to float off, and told *Kimberley* not to try to assist because the damage done to *Cossack*'s bows would have risked its sinking. *Foxhound* helped rescue sailors from *Erich Giese*.

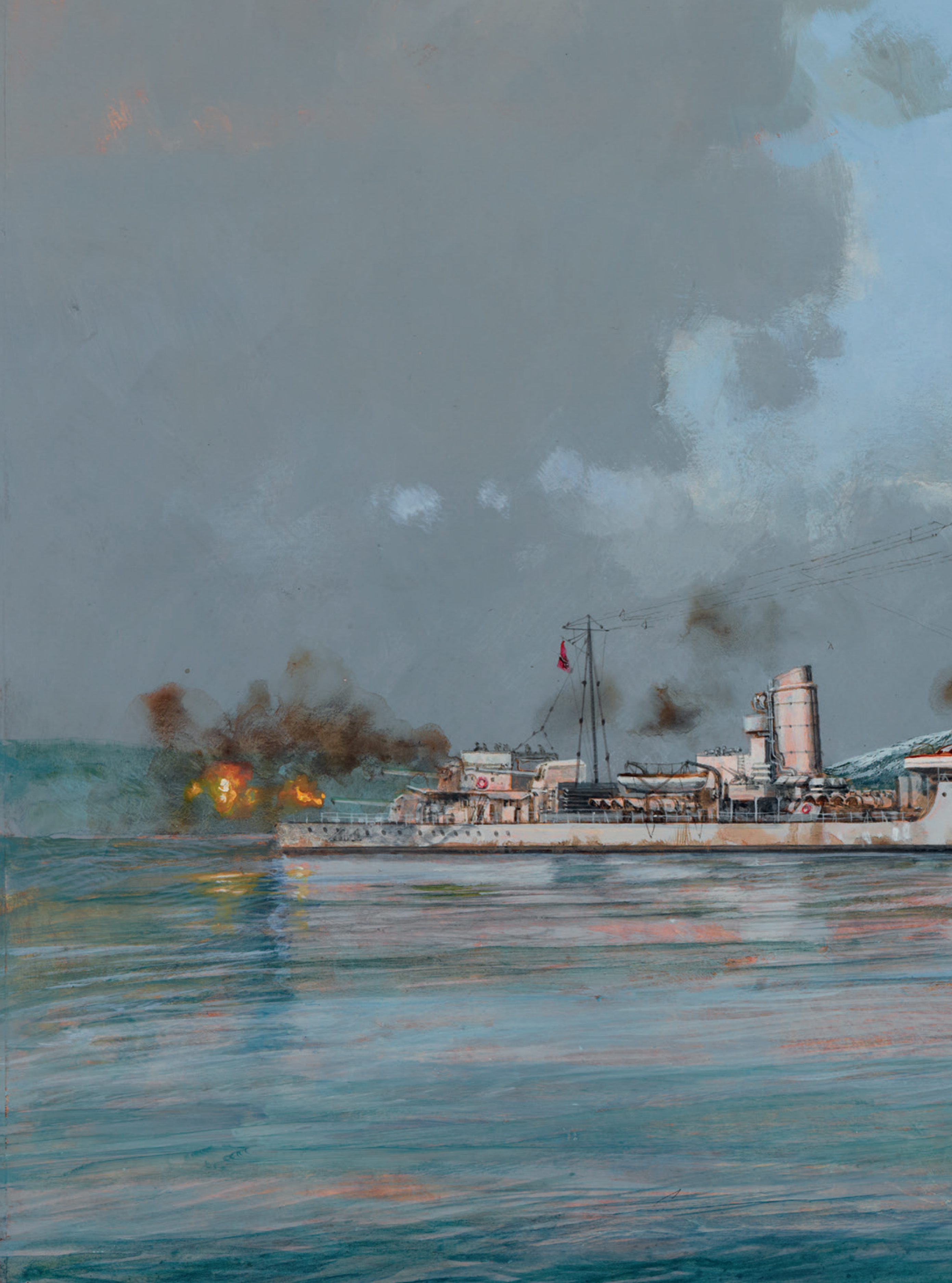
In Rombaks Fjord, the crews of *Wolfgang Zenker* and *Bernd von Arnim* prepared to scuttle their ships. *Hans Lüdemann* stood guard, 2.5 miles from the Stromness Narrows – situated halfway down the fjord and reducing the fjord's width to 500yd – stern on, in order that three guns and four torpedoes could fire and to enable the ship to depart quickly. With two torpedoes and four guns working but with no fire control, *Georg Thiele* was 3 miles behind the narrows, facing the western shore with no thoughts of escape.

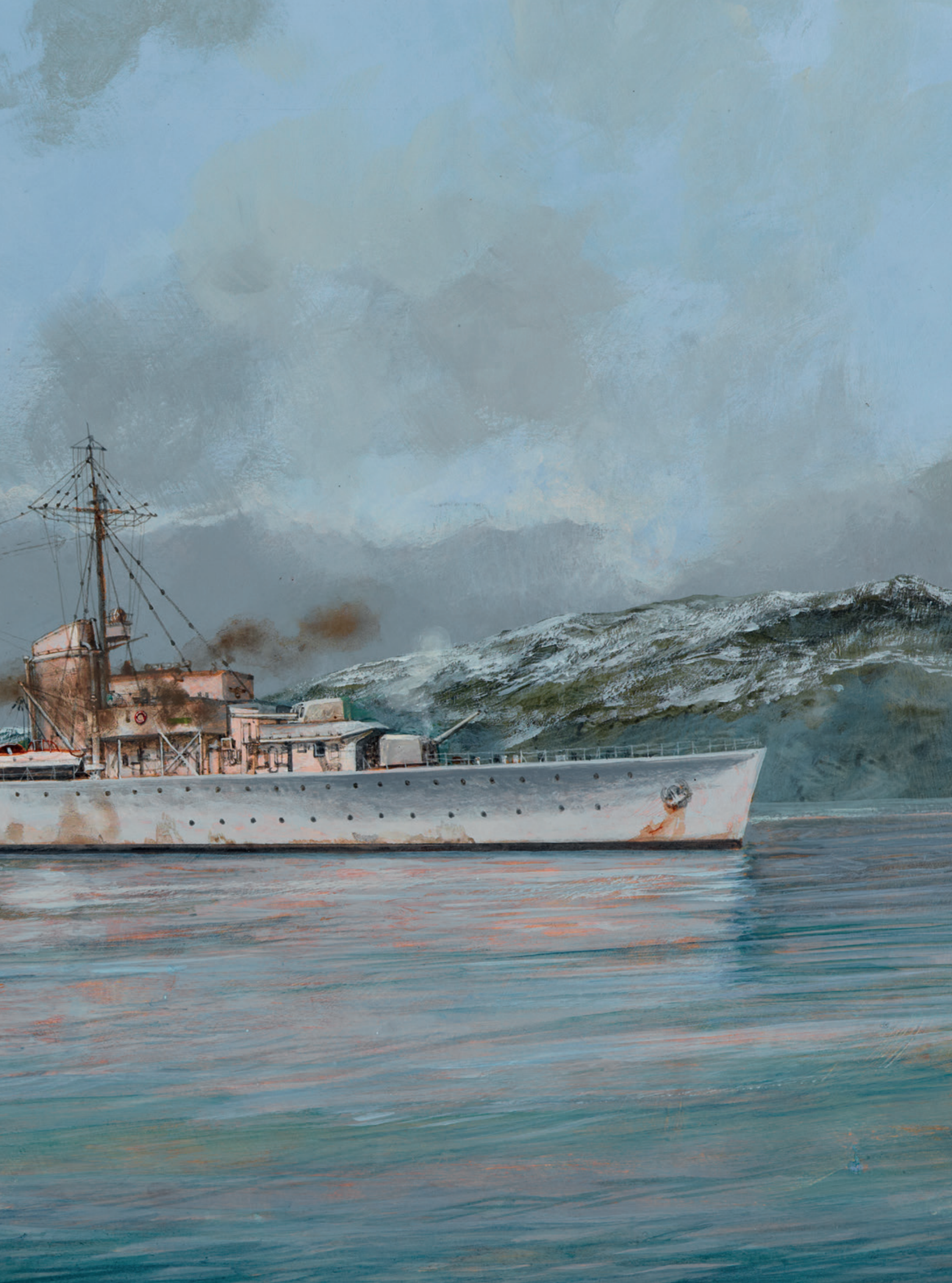
At 1424hrs, *Eskimo* and *Forester* entered the 800yd-wide Rombaks Fjord and signalled *Hero*, *Bedouin* and *Icarus* to follow. Smoke reduced their speed to 15kn. Swordfish had informed Commander St John Micklethwait on *Eskimo* that two ships had gone to the end of the fjord and that a further two were 3 miles behind the narrows. At 1445hrs, *Eskimo* was at the narrows and fired at *Hans Lüdemann*, knocking out the No. 4 and No. 5 guns; in return, the German ship fired four torpedoes and evaded. *Eskimo* had positioned itself abeam to fire a torpedo at *Georg Thiele* and thus was vulnerable; the British ship steamed full ahead to within 100yd of the shore to avoid the four torpedoes fired from *Hans Lüdemann* and then had to reverse engines. One torpedo ran under *Forester*. *Georg Thiele* was then the target for both *Eskimo* and *Forester*, 4,000yd away. Oberleutnant zur See Helmut Sommer, the torpedo officer on *Georg Thiele*, had two torpedoes left, but one was fired by mistake when a wounded sailor fell on the lever and it launched, hitting the shore; Sommer fired the other torpedo; although it ran on the surface because the depth mechanism was faulty, it hit *Eskimo*'s bow at 1451hrs, below the forward pair of guns, making them fall into the hull. *Eskimo*'s 'B' turret continued to fire as if nothing had happened; the ship withdrew stern first, but the damage ground the ship to a halt. At 1452hrs, *Eskimo* fired a torpedo that missed. *Eskimo* and *Forester* kept firing shells. *Georg Thiele* suffered substantial damage and the ship was beached at 1500hrs.

At 1515hrs, Whitworth ordered all destroyers into the fjord. McCoy sounded a note of caution, pointing out the advantage that possession of torpedoes would confer upon the Germans; Whitworth replied at 1535hrs that his captain had to accept the

OVERLEAF

Eskimo was the first of the British ships to clear the Stromness Narrows, finding possible targets for a torpedo attack in the shape of *Hans Lüdemann* and *Georg Thiele*. Having turned abeam to launch torpedoes, *Eskimo* accelerated full ahead to avoid a spread of *Hans Lüdemann*'s torpedoes, the British destroyer stopping as it reached the shallows, all the time engaging the enemy with gunnery. *Georg Thiele*, on a more-or-less parallel line to *Eskimo*, is shown here returning fire with its four remaining guns and one last remaining torpedo.





threat posed by torpedoes (Dickens 1974: 150). *Georg Thiele*'s resistance had delayed the pursuit until 1540hrs. *Hero*, *Icarus* and *Kimberley* continued up the fjord, but no combat was necessary as by then all the remaining German ships were being scuttled. There were no casualties on *Wolfgang Zenker* and *Bernd von Arnim*. The depth charge on *Hans Lüdemann* failed to detonate and there was a hope that the ship could be boarded and towed, but Micklethwait vetoed this idea and a torpedo fired from *Hero* sunk the German vessel.

Whitworth heard reports from a captured German officer from *Erich Giese* that U-boats were in the fjord. At 1755hrs, *Warspite* retired along with *Foxhound*, *Bedouin*, *Hero* and *Icarus*, but at 2050hrs at Vest Fjord Whitworth decided to take the battleship in again as *Cossack* was aground and *Eskimo* was badly damaged. *U 25* fired at *Warspite*, but missed. *Kimberley* was trying to tow *Cossack* out, but the Tribal-class destroyer would only float with the tide at 0315hrs; it would then steam stern first to the repair facility at Skjelfjorden in the Lofoten Islands at 6kn with *Kimberley*, while *Punjabi* (capable of 15kn) and *Forester* helped *Eskimo* to get away, also stern first and in need of repair at the same facility. *Hardy*'s surviving crew had observed the battle and seized a signal lamp and a motor boat from the wrecked *Erich Koellner*. They were ferried on board *Ivanhoe*, which had also appeared.

Oberleutnant zur See Fuchs, the gunnery officer on *Georg Thiele*, shouted orders to No. 2 gun over the front of the bridge; No. 3 and No. 4 guns were only intermittently firing because the ammunition hoists were damaged. When the bridge was hit, Fuchs reported to Korvettenkapitän Max-Eckart Wolff, the wounded captain of the ship, that no shells were available, and the latter decided to beach at 1500hrs having sustained 42 casualties. Here the ship is shown from the air, with its bow high over the narrow ledge. The crew abandoned ship onto the shore. Many thought they were fired on as they were making their escape. (© IWM A 24)

ANALYSIS

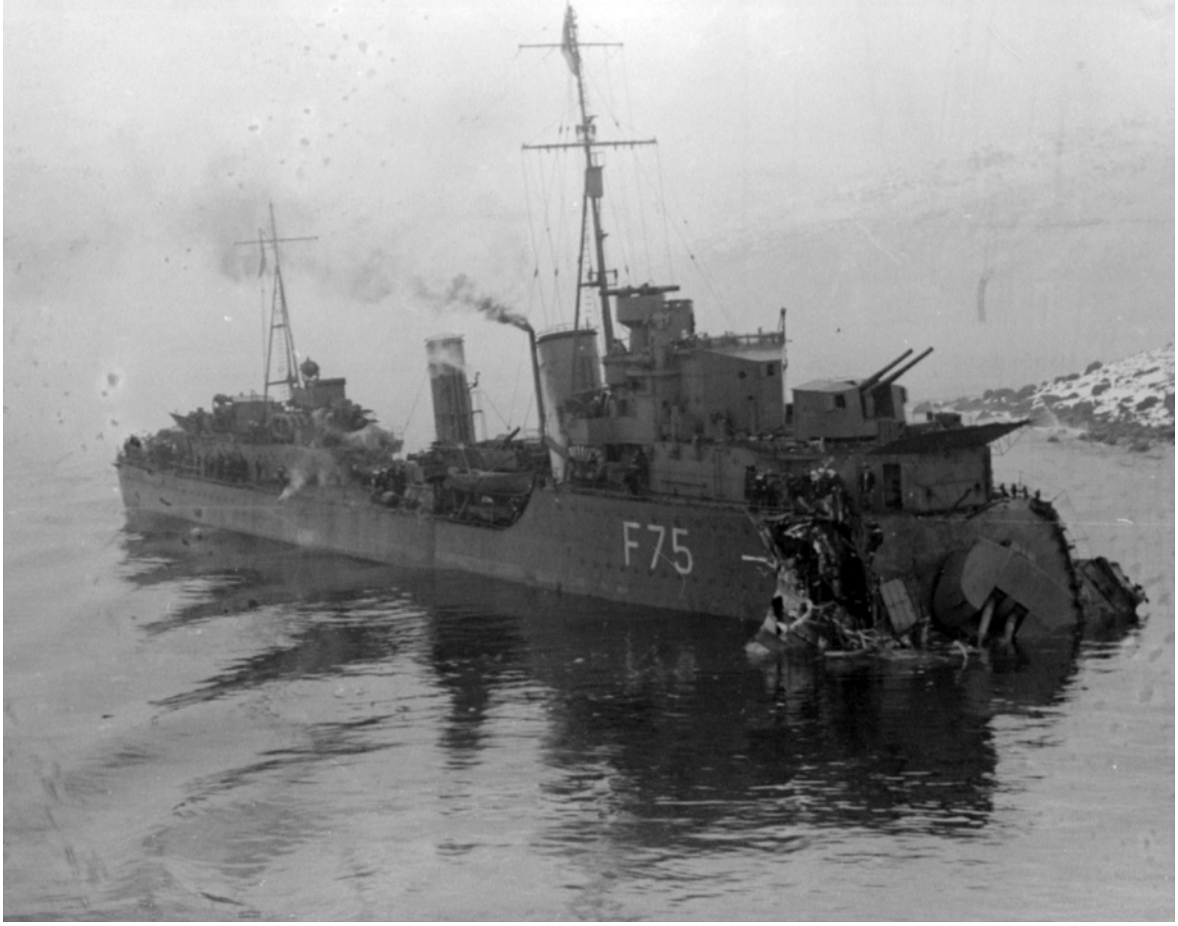
The Norwegian campaign was ambitious on both sides. Allied forces could not be maintained in northern Norway in the long term, because German air superiority would be achieved in a matter of weeks. The planners tried to make this clear, but the War Cabinet received military advice from different sources and Churchill, having served on the front line as well as being a strategic policy maker, dominated debate. Unlike the Germans, the British lacked a dedicated inter-services staff that could assess intelligence or plan the Norway operation. On 5 February 1940, the Wehrmacht put together a small team that was soon augmented by the headquarters personnel of the formation designated to be the invading force.

Although British strategy towards Norway in preparing an invasion force was faulty in the long term, the difference that the Royal Navy could make operationally to hamper a smooth German invasion was substantial, because of the presence of the mine-laying force. The German force that was destined for Narvik only arrived because the bad weather had persuaded Vice Admiral Whitworth to pull his destroyers out of Vest Fjord. If the British had maintained their patrol line, interception could have occurred. Generalmajor Dietl's Gebirgsjäger-Regiment 139 reached Narvik, but holding onto the town was not certain as his forces initially lay beyond the range of air support. He was assisted by the British decision – in preparation for a naval battle – to disembark soldiers previously bound for Norway.

The importance of engaging the German destroyer force was clear to Captain Warburton-Lee and he ended their hopes of escaping. The results were not decisive, however; Fregattenkapitän Bey could still operate as a deterrent to an Allied landing to recapture the town and his force needed to be destroyed. Whitworth could have waited until an infantry battalion was available to land in the town, though. On

13 April, he recommended that troops be landed to occupy Narvik as soon as possible (Macintyre 1959: 108); with Plan R4 already abandoned, though, the British Army was not ready. Major-General Pierse Mackesy, commanding Rupert Force including 24 Guards Brigade, would arrive on 15 April, but was told not to land on an enemy-occupied shore. His troops were not prepared to conduct an opposed landing. The opportunity for an immediate assault had gone, but Narvik – only accessible over a sea still dominated by the Royal Navy and not within reach of the Luftwaffe – would be captured in the days ahead by a British brigade landed some distance away. Dietl would be reprieved from internment in Sweden because the majority of Mackesy's force was landed further south in an overambitious attempt to capture Trondheim that was doomed to failure. The Allied aim was now to support the Norwegian government rather than to secure Narvik, and the Allied force available to seize the town was dissipated.

In April 1940, 20 German destroyers were involved in the Norway operation. Operations were challenging, carried out in varying weather, in narrow coastal tracts and with the chance of fog and ship breakdowns. Following the disembarkation of German soldiers at Narvik, the destroyer flotilla there was short of fuel and was forced to remain and refuel, but two oilers (*Kattegat* and *Skaggerak*) were already lost



Eskimo lies severely damaged at Narvik, 13 April 1940. Having successfully avoided the torpedo attack of *Hans Lüdemann*, *Eskimo* ran out luck when facing the last torpedo from *Georg Thiele*, which effectively blew the British ship's bows off, the wreckage hanging down and dragging on the bottom of the fjord. *Eskimo* managed to cut free the worst of the damaged sections and could make way in reverse, undergoing temporary repairs at Skjelfjorden in the Lofoten Islands before being rebuilt by Vickers-Armstrong in Newcastle-upon-Tyne. The British destroyer survived the war, being sold for scrap and broken up in 1949. (© IWM A 25A)

on their way to the port and a third (*Jan Wellem*) that had reached Narvik had limited capacity, being a converted whaler. Kommodore Bonte was forced to loiter, but he underestimated the probability of a British surprise attack on 10 April; the failure to maintain a guard destroyer was an error, as was the assumption that U-boats would provide warning and protection. By the time of the first British attack on Narvik, Bonte had three destroyers refuelled and could have maintained a continuous patrol.

At 0300hrs on 10 April, *Diether von Roeder* relieved *Anton Schmitt* and began patrolling in Ofot Fjord. At 0345hrs, as the sun began to rise, the patrol ended and *Diether von Roeder* headed to Narvik (perhaps 1 mile ahead, but not visible to the approaching British flotilla because of the weather); the ship would return to the harbour at 0425hrs and take position at the northern end, not waiting for relief. Bonte stated in his journal that he wanted Fregattenkapitän Hans-Joachim Gadow to ensure *Hans Lüdemann* relieved *Diether von Roeder* as the former would have refuelled by 0455hrs, but no orders were issued to this effect. Gadow stated he did this, but the message seemingly was never received. Korvettenkapitän Holtorf noticed *Hans Lüdemann* still being refuelled, but proceeded to anchor. The failure to maintain a guard ship assisted the undetected approach of the British flotilla. Bonte could have used the destroyers in Ballangen Bay to patrol further out in the fjord; and he could have distributed his ships in side fjords and have the tanker carry out refuelling operations there.

The wreck of a merchantman, sunk during the battles of Narvik. Merchant vessels were hit by torpedoes and gunfire, eight being sunk in little more than an hour during Warburton-Lee's sorties into Narvik harbour on 10 April 1940. (NH 71407 courtesy of the Naval History & Heritage Command)

TORPEDO EFFECTIVENESS AT NARVIK

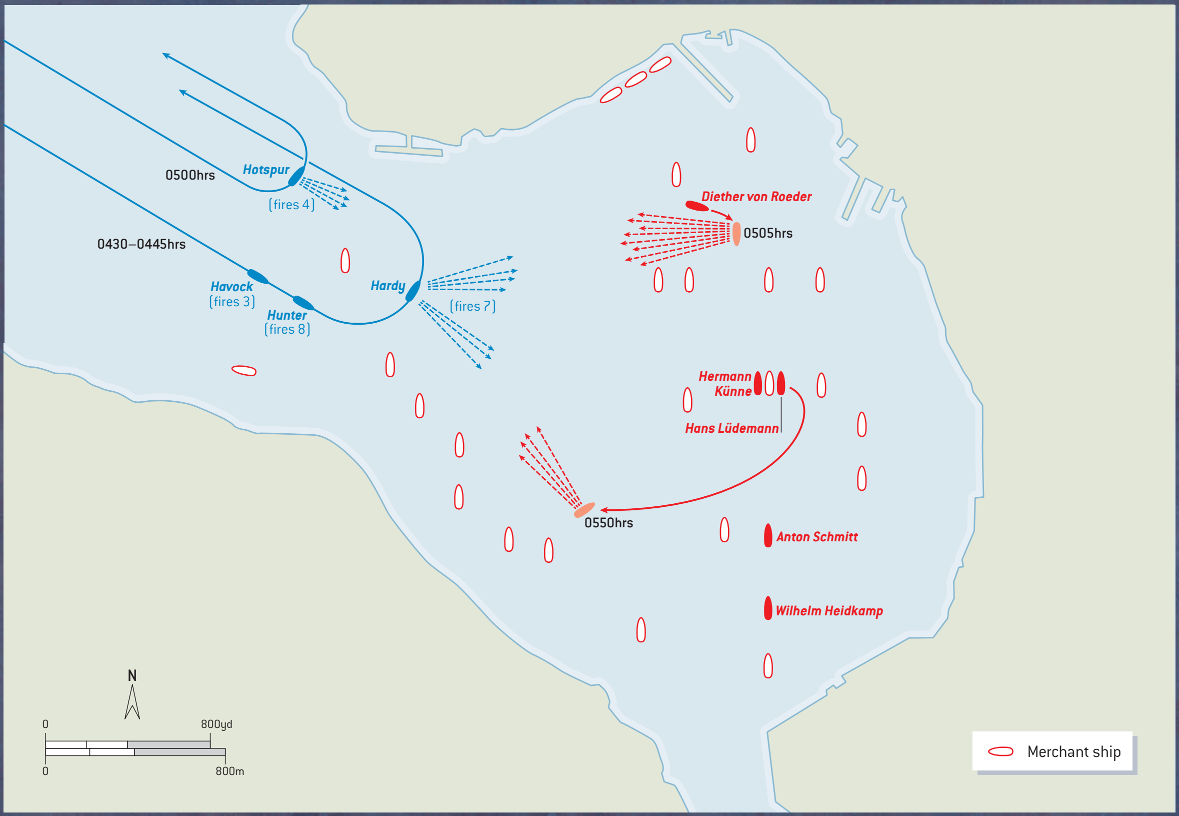
The relative effectiveness of British torpedoes – and the often dismal failure of their German counterparts – was likely one of the main factors in the outcome of the battles at Narvik, notably on 10 April (opposite). The British force made three sorties into Narvik harbour, which involved the destroyers firing broadsides of torpedoes that sank eight of the 25 merchant vessels at anchor, as well as *Anton Schmitt* and *Wilhelm Heidkamp*. The Germans responded by firing at least 12 torpedoes (four from *Hans Lüdemann* and eight from *Diether von Roeder*), not one of which hit. Of the five British ships engaged, *Hostile*, *Hunter* and *Havock* all had one torpedo run beneath them and *Hardy* had two, while other torpedoes ran surfaced or beached themselves on the harbour banks without exploding.

British F- and H-class destroyers mounted a pair of QR Mk VIII* tubes except *Icarus*, which carried two PR launchers; the Tribal-class destroyers each carried one set of QR Mk IX tubes. British ships always launched their Mk IX/Mk IX* torpedoes when their tubes were set at 90° to the fore-and-aft line (the tubes were designed to lock in place at 90°, a position known as the 'semi-permanent stop'; firing at other angles risked the torpedoes coming into contact with the deck before they cleared the ship's gunwales), and the firing ship would usually turn in an arc away from the target as it fired, ensuring that there was a spread in the tracks (Hodges 1971: 31). In some cases when it was necessary to fire torpedoes on a slightly different bearing than that allowed by the broadside, the track could be altered by up to 60° by pre-setting the gyro, which would allow the 'fish' to turn once it was in the water.

The German destroyers at Narvik also mounted pairs of rotating quadruple torpedo launchers, firing the G7a T1 torpedo. The German weapons employed magnetic pistols (designed to detonate once the torpedo ran under the magnetic field of a ship's hull), but these proved desperately unreliable due to a range of possible factors, including the nature of the magnetic field at such a northerly latitude as well as the possible interference caused by the degaussing of British ships' hulls. Depth keeping also proved problematic, with torpedoes either running on the surface or too deep, passing beneath the hulls of the British destroyers that were riding higher than usual because they had burned up so much fuel. Even when magnetic pistols were discarded in favour of impact pistols, depth-keeping problems meant that some German torpedoes ran under their targets, while others hit but failed to go off because they needed a broad angle of strike to ensure detonation.

Warburton-Lee had already destroyed two German destroyers when he decided to persist with his attack. His ships, each equipped with eight torpedo tubes, could have achieved decisive results, but targeting enemy destroyers was difficult in the crowded harbour and the fact that his ships' commanders had not had a chance to use them all was what decided his actions. His intelligence suggested that he would encounter only a single destroyer on his withdrawal. If it were not for the faulty magnetic pistol on German torpedoes, Warburton-Lee's decision to return to the harbour would have had costly consequences; a better decision would have been to withdraw and obtain reinforcements. Spending the time he did near the harbour enabled the German destroyers in the side fjords to raise steam; the warning given to them about the British attack was late and if they had been made aware earlier none of Warburton-Lee's ships might have escaped. Once he was made aware, Bey did not pursue aggressively enough, yet what the torpedoes from Bonte's ships in the harbour did not achieve the gunnery and single torpedo from those outside did.

During the second battle of Narvik, with no chance of escape the German crews were determined to resist their inevitable fate. They fought well; all commanding officers except one were promoted, and a medal was struck. British Tribal-class


0500hrs
Hotspur
(fires 4)
0430–0445hrs
Havock
(fires 3)
Hunter
(fires 8)
Hardy
(fires 7)
Diether von Roeder
0505hrs
Hermann Künne
Hans Lüdemann
0550hrs
Anton Schmitt
Wilhelm Heidkamp
N
0
800yd
0
800m
Merchant ship

destroyers were ideal in an operational environment that restricted movement as they had twin mounts, but the guns were at times ineffective, even when the range was within 2,000yd as when *Cossack* engaged *Diether von Roeder*. *Eskimo* provided better shooting at 4,000yd. The Tribals' use of a limited torpedo armament provided results that were less than adequate.

The commitment of *Warspite* threatened to change the course of the battle, and not necessarily in Britain's favour. If the battleship had been hit by a torpedo some destroyers would have had to stop fighting and attend to the situation. German use of torpedoes, with the ability to conduct off-angle shooting, would have given them the advantage if the magnetic pistol was working properly. The German crews' gallant resistance did not achieve any meaningful results, but this could not be determined at the start of the day; scuttling their ships was not an option, but doing their best to preserve their crews enabled the Germans to fulfil a strategically important role in the land campaign during the days that followed. Dietl used captured Norwegian weapons to equip 2,500 sailors, formed into battalions: Marine-Regiment Berger defended the railway and Marine-Bataillon Kothe defended Bjerkvik. The sailors comprised over 50 per cent of Dietl's force and Dietl admitted that without them, he would not have held on in northern Norway.

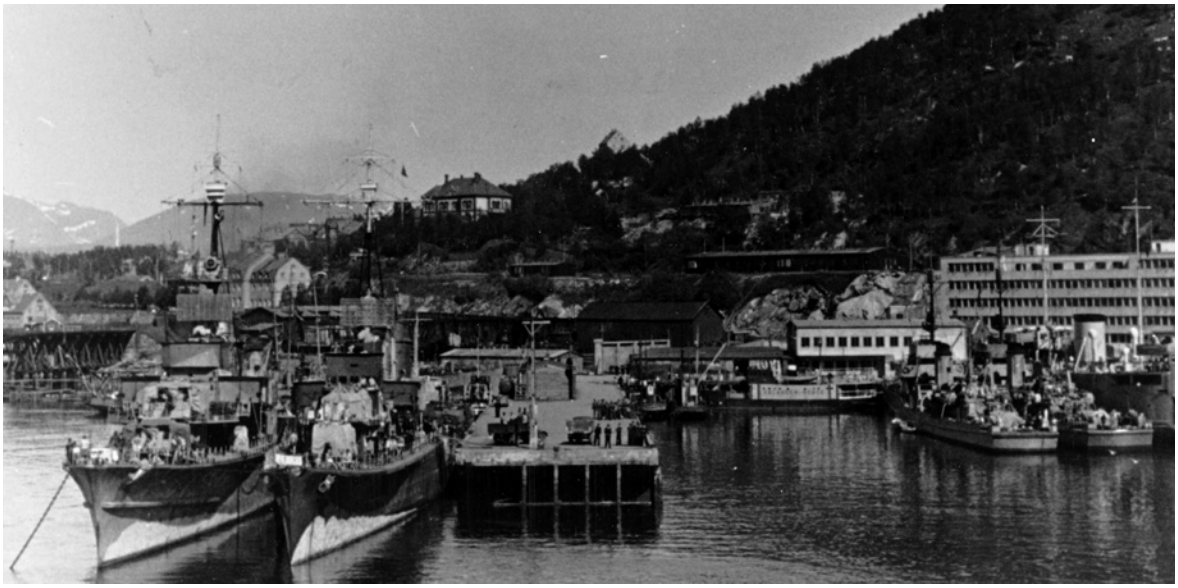
AFTERMATH

At the end of April 1940, only ten German destroyers remained – and only three were operational. In early June, four destroyers escorted *Scharnhorst* and *Gneisenau* north to intercept British supply ships, but soon went into Trondheim, seeing no action against British warships; the German capital ships then sank the British destroyers *Acosta* and *Ardent* and the carrier *Glorious*, but were damaged and escorted back to Germany by destroyers. German aircraft inflicted more damage upon British destroyers: in total, 13 British destroyers would be lost to enemy aircraft in 1940.

In an effort to increase the reliability and endurance of ships and machinery, on 6 July 1940 Vizeadmiral Schniewind demanded design improvements to guarantee trouble-free running and sea-keeping. The Type 1936A was the result. Eight ships (*Z 23*–*Z 30*), each equipped with four 15cm guns in single turret mounts, were commissioned in 1940–41; range was 2,085–2,240 miles. Four ships (*Z 23*, *Z 24*, *Z 25* and *Z 29*) would have the forward turret modified to take twin-barrelled 15cm guns. Equipped with five 15cm guns (with the forward turret having a twin mount), the Type 1936A (Mob) followed; range was 2,240 miles. During 1942–43, seven ships (*Z 31*–*Z 34* and *Z 37*–*Z 39*) were commissioned. Equipped with five 12.7cm guns in single turrets, the Type 1936B had a range of 2,600–2,950 miles; in 1943–44, three ships (*Z 35*, *Z 36* and *Z 43*) were commissioned.

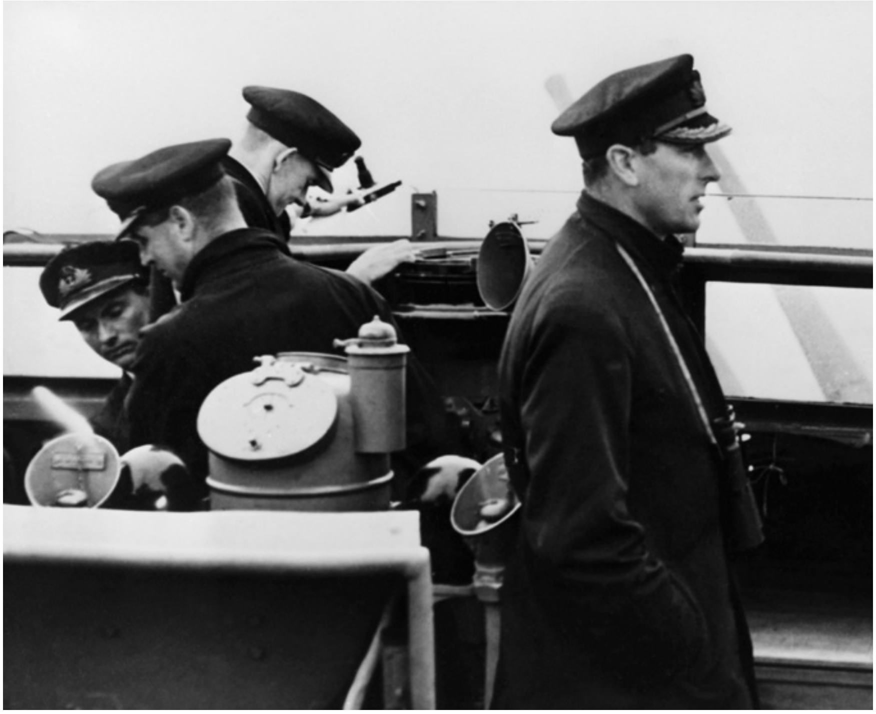
For the British, the Norway campaign did not have any major impact on ship design and development other than the confirmation of the desperate need for better anti-aircraft protection. The new destroyers being launched had already reverted to the smaller designs produced before the Tribals, and though they were initially equipped with two sets of torpedo tubes, the second set would often be replaced by anti-aircraft armament instead. Tactically, the gun battles between the British and German vessels had been conducted at relatively close ranges (averaging 4,000–6,000yd,

OPPOSITE
A view looking towards the stern of a Type 1936 destroyer anchored next to a merchant or supply ship in Narvik harbour, April 1940. The deficiencies in ammunition storage and fuel capacity that afflicted all classes of German destroyers were exacerbated by the loss of their munition supply ship and the general havoc wreaked by Warburton-Lee's attack on shipping at anchor in the harbour on 10 April. (Bundesarchiv Bild 101II-MW-5655-13 Foto: Böttger)



Two German destroyers anchored at Narvik during World War II. At right is a pair of minesweepers and a minelayer. The camouflage 'bow waves' visible on the destroyers date them to sometime after the April 1940 battles at Narvik. (NH 71443 courtesy of the Naval History & Heritage Command)

far below the maximum reach of the 4.7in and 12.7cm guns), the main armament of both sides proving significant when hits were scored. Against more formidable opponents or potentially larger forces the practice was for destroyers to stand off until they could be reinforced with cruisers or capital ships (such as the use of *Warspite* at Narvik). Even so, aggression and boldness were key attributes that the Royal Navy expected its destroyer captains to have in abundance.



An excellent study of Captain Lord Louis Mountbatten on the bridge of the destroyer *Kelly*, taken sometime between late 1939 and early 1941 (possibly during the Norway campaign in which the ship played a small part in May 1940); the 'darkened' caps indicate wintry or northern climes, as white covers were worn during summer or when serving in the Mediterranean or tropical stations. Also in view are the binnacle and several speaking tubes that connected the bridge to vital parts of the ship, including the steering room and the engine room. (Keystone-France/Gamma-Keystone via Getty Images)

SELECT BIBLIOGRAPHY

Beauchamp, Ken (2001). *History of Telegraphy*. London: Institution of Engineering and Technology.

Bekker, Cajus D. (1977). *Hitler's Naval War.* New York, NY: Zebra.

Böttger, Gerd (1941). *Narvik im Bild*. Oldenburg i.O./Berlin: Gerhard Stalling Verlag.

Breyer, Siegfried (1995). *Die Deutschen Zerstörer (I).* Marine-Arsenal 33. Wölfersheim-Berstadt: Podzun-Pallas.

Breyer, Siegfried (1996). *Die Deutschen Zerstörer (II).* Marine-Arsenal 36. Wölfersheim-Berstadt: Podzun-Pallas.

Campbell, John (2002). *Naval Weapons of World War Two.* Annapolis, MD: Naval Institute Press.

Claasen, Adam (2004). 'The German Invasion of Norway, 1940: The Operational Intelligence Dimension', in *Journal of Strategic Studies*, 27:1: 114–135.

Cope, Ron (2015). *Attack at Dawn. Reliving the First Battle of Narvik in World War Two.* London: Clink Street.

Cope, Ron (2018). *Doomed Destroyer.* London: Clink Street.

Dickens, Peter (1974). *Narvik: Battles in the Fjords*. London: Ian Allan.

Friedman, Norman (2006). *British Destroyers & Frigates. The Second World War and After.* London: Chatham.

Friedman, Norman (2009). *British Destroyers: From Earliest Days to the Second World War.* Barnsley: Seaforth.

Friedman, Norman (2013). *Naval Anti-Aircraft Guns and Gunnery.* Barnsley: Seaforth.

Haarr, Geirr H. (2012). *The German Invasion of Norway: April 1940.* Annapolis, MD: US Naval Institute Press.

Harnack, Wolfgang & Sifferlinger, Nikolaus A. (2013). *Georg Thiele: Zerstörer Z2 Georg Thiele.* Schortens/Heidmühle: Heiber, Hartmut.

Hodges, Peter (1971). *Tribal Class Destroyers.* London: Almark.

Hodges, Peter & Friedman, Norman (1979). *Destroyer Weapons of World War 2*. Annapolis, MD: Naval Institute Press.

Kiszely, John (2017). *Anatomy of a Campaign: The British Fiasco in Norway, 1940.* Cambridge: Cambridge University Press.

Konstam, Angus (2017a). *British Destroyers 1939–45: Pre-war classes.* New Vanguard 246. Oxford: Osprey.

Konstam, Angus (2017b). *British Destroyers 1939–45: Wartime-built classes.* New Vanguard *253*. Oxford: Osprey.

Koop, Gerhard & Schmolke, Klaus-Peter (2003). *German Destroyers of World War II.* Barnsley: Seaforth.

Lavery, Brian (2006). *Churchill's Navy. The Ships, Men & Organisation 1939–1945*. London: Conway.

Lavery, Brian (2011). *Hostilities Only. Training the Wartime Royal Navy.* London: Conway.

Lavery, Brian (2012). *All Hands. The Lower Deck of the Royal Navy since 1939.* London: Conway.

Lyon, David (1970). *HMS* Cossack/*Tribal Class Destroyer.* Warship Profile 2. Windsor: Profile Publications.

Macintyre, Donald (1959). *Narvik*. London: Evans.

Plevy, Harry (2008). *Destroyer Actions: September 1939–June 1940.* Staplehurst: Spellmount.

Williamson, Gordon (2003). *German Destroyers 1939–45.* New Vanguard 91. Oxford: Osprey.

INDEX

References to illustrations are shown in **bold**.

A-class destroyers 12, 20, 24, 25, **26**, 30–31: *Acosta* 77; *Afridi* 14, **14**; *Amazon* 12; *Ambuscade* 12; *Ardent* 77
Admiral Hipper 9, **33**, 40, 41, 42, 43, **43**
aircraft, use of (GB) 6, 9, 63: Swordfish 24, 48, 59, 62, 63, **63**, 64, **65**, 66, 67
aircraft, use of (Ger) 2, 16, 20, 77: Do 18/He 111 39
aircraft carriers (GB) 17: *Furious* 9, 59, 64; *Glorious* 77
anti-aircraft guns (GB) 10, 13, 24, 77: .303 Lewis 24, 26; 0.5in Vickers 21, 24, **24**, **26**, 30; QF 2-pdr 'pom-pom' 21, 25, 26, 67; 20mm Oerlikon 24, 26
anti-aircraft guns (Ger): 2cm C/30 23, 27, 28–29; 3.7cm SK C/30 23, 27, **27**, 28, 29, 31; 40mm Bofors 27

battlecruisers (GB) 17: *Hood* 17; *Renown* 7, 17, 34, 45: service 6, 9, 11, **41**, 42, 43, 44; *Repulse* 17, 42: service 39, 43, 44
battlecruisers (Ger): *Gneisenau* 6, 9, 17, 40, **41**, 43–44, 59, 77; *Scharnhorst* 6, **6**, 9, 17, 43, 46, 77: service 6, 40, **41**, 43–44, 59
battleships (GB) 17, 59: *Malaya* **63**; *Rodney* 42; *Valiant* 42; *Warspite* 7, **7**, 64: service 4, 7, 9, 39, 59, 60, 61, **61**, 62, 63, 64, **64**, 66, 70, 75, 78
battleships (Ger) 40: *Bismarck* 17; *Deutschland* 17; *Tirpitz* 17
Bey, Fregattenkapitän Erich 31, 39, 44, 47, 51, 52, 53, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 71, 74
Bonte, Kommodore Friedrich 18, 35, 38, 39, 40, 41, 43, 44, 47, 48, 58, 73

depth charges: (GB) 25, 56, 60; (Ger) 23, 29, 31, 63, 70
Dietl, Generalmajor Eduard 39, 40, 44, 71, 72, 75

Eidsvold coastal vessel 9, 19, 41, 44, **44**

F-class destroyers: armament **10**, 21, 24, 25, 26, **26**, 73; features/specifications 20, 21, 22, 30–31: *Faulkner* **30**; *Fearless* 42; *Forester* 21: service 59, 60, 61, **61**, 63, 66, 67, 70; *Fortune* 20; *Foxhound* **10**, 20, 21; service 51, 59, 60, 61, **61**, 62, 67, 70
Forbes, Adm Charles 42, 43, 45, 59

G-class destroyers 11: armament 12, 21, 24, 25, 26, **26**, 43; features/specifications 11, 14, 20, 21, 22, 30–31: *Glowworm* 21, 25: service 9, **33**, 41, 42, 43, **43**; *Greyhound* 42, 57
guns (GB) 45, 49, 50, 51, 52, 53, 56, 61, 63, **64**, 67: 4.7in **5**, 12, 13, 15, 30, 49, 78: Mk IX 8, 10, **10**, 21, 24, **26**; Mk XII **13**, **14**, 21, 24, **24**, 26; BL 15in Mk I **7**; QF 4in Mk XVI 15
guns (Ger) 18, 50, 51, 53, 56, 59, 61, 63, 67, **68–69**, 70: 10.5cm 15; 12.7cm SK C/34 8, 15, 16, 18, 23, 24, **27**, 28, 29, 31, 77, 78; 15cm 18, 77

H-class destroyers: armament 8, 12, 15, 21, 24, 25, 26, **26**, 48, 49, 50, 52, 53, **54–55**, 56, 73; features/specifications 11, 14, 20, 21, 30–31: *Hardy* 8, **8**, 9, 21, 24, 34, 37, **47**, 48, 49, 70: service 8, 17, 41, 42, 44, 46, 47, 49, 50, 51–53, 56, 57, **57**, 73; *Havock* 21: service 17, 20, 41, 42, 46, 47, **47**, 49, 50, 51, 52, 53, 56, 57, 58, 73, **75**; *Hero* **11**, 21, **61**: service 11, 42, 51, 59, 60, 61, 62, 67, 70; *Hostile* 21: service 41, 42, 46, 47, **47**, 48, 49, 50, 51, **51**, 53, 56, 57, 58, 73; *Hotspur* 21: service 12, 41, 42, 46, 47, **47**, 48, 49, 50, 51, 53, **54–55**, 56–57, **75**; *Hunter* **12**, 21: service 9, 12, 17, 20, 41, 42, 44, 46, 47, **47**, 48, 49, 50, 51, 53, **54–55**, 56, 73, **75**; *Hyperion* 20, 42
Heppel, Lt George 45, 49, 50, 51, 52–53
Holtorf, Korvettenkapitän Erich 49, 50, 73

I-class destroyers 11: armament 12, 21, 24, 25, 26, **26**, 73; features/specifications 14, 20, 21, 22, 30–31: *Icarus* 21, 25, 59, **61**, 67, 70, 73: service 41, 42, 51, 59, 60; *Impulsive*/*Ivanhoe* 41, 42, 70

J-class destroyers **5**, 14, 24, 25, 30–31: *Jersey*/*Juno* 5, 8; *Jupiter* **5**

K-class destroyers: armament 21, 24, **24**, 25, **26**; features/specifications 14, 20, 21, 22, 30–31: *Kelly* **78**; *Kelvin* **24**; *Kimberley* 21: service 44, 45, 59, 60, 61, **61**, 63, 66, 67, 70
Kriegsmarine 8, 16, 17, 36, 37, 42
  Kriegsschiffgruppen 1 and 2: 9, 40, **41**
  Zerstörer-Flottillen 4, 9: 2. **6**, 9, 35, 40, 41, 42; 3. 40; 4. 40, 44

Layman, Cdr Herbert 50, 53, 56, 57
light cruisers (GB): *Birmingham* 42; *Edinburgh* 9; *Hyacinth* 34; *Penelope* 44, 45, 57, 58, 59
Lütjens, Vizeadmiral Karl 39, 40, 41, 43

McCoy, Cdr James 58, 60, 67
merchant ships 4, 44, 48, 49, 58, 77: attacks on 50, 51, 58, 73, **73**, **75**
Micklethwait, Cdr St John 67, 70
minelaying operations: (GB) 4, 7, 9, 39, 41, **41**, 42, 45, 59, 71; (Ger) 5, 8, 9, 16, **78**
minesweeping operations: (GB) 12, 25, **51**, 60, **61**, **62**; (Ger) **78**

N-class destroyers 24, 25, 30–31
Norge coastal vessel 9, 19, 41, 44

oilers: *Jan Wellem* 44, 48, 49, 50, 58, 73; *Kattegat* 44, 72; *Skaggerak* 72–73
Operation *Weserübung* 4, 6, 8, 9, 17, 39, 40–41, **41**, 42, 46

Raeder, Großadmiral Erich 15, 16, 35, **36**, 37
RFR/RNR/RNVR 32, 33
Royal Navy 32–34
  cruiser squadrons: 2nd 9, 42
  destroyer flotillas 11–12, 34: 2nd 8, 9, **41**, 42, 58; 4th/6th 14; 20th 9, **41**, 42

Smidt, Korvettenkapitän Karl 5, 35, 66
Stanning, Lt Geoffrey 45, 46, 47, 51, 52, 53
supply ships (GB) 77
supply ships (Ger) **76**: *Alster* 59; *Altmark* 6, 8, 62; *Rauenfells* 58

torpedoes (GB) 11, 12, 13–14, 31, 42, 43, 49: Mk IX/IX*/IX** 25, 26, **26**; use of 20, 46, 47, 49, 50, 51, 53, 56, 57, 61, 63, 64, 65, 66, 67, 70, 73, 74, 75, **75**
torpedoes (Ger) 27, 29, **29**, 30, 49, 51, 59, 65, 67, 70: use of 5, 19, 38, 44, 47, 50, 51, 53, 56, 58, **59**, 60, 61, 63, 64, 65, 66, 67, 70, 72, 73, 74, 75, **75**: G7a/G7aT1/G7e 27, **27**, 29, 73; shortcomings 27, 29, 38, 73, 74
Tribal-class destroyers 13, 14, 77: armament 13, **13**, 14–15, **14**, 21, 24, 25, 26, **26**, 63, 67, 73, 74–75; features/specifications **13**, 14, **14**, 20, 21, 22, 30–31, 38: *Bedouin* **13**, 21: service 13, 44, 45, 58, 59, 60, 61, **61**, 62, 63, 65, 66, 67, 70; *Cossack* 21, **62**: service 6, 8, 34, 59, 60, 61, **61**, 62, 63, 64, 66–67, 70, 75; *Eskimo* 21, **38**: service 13, 41, 42, 44, 45, 58, 59, 60, 61, **61**, 62, 63, 65, 66, 67, 70, 72, **72**, 75; *Punjabi* 21, 45: service 13, 44, 59, 60, 61, **61**, 62, 63, 65, 66, 70
Type 1934 destroyers 8, 12, 15–16, 17–18: armament 8, 20, 23, 27, **27**, 28–29, 31, 56, 59, 67, 70; features/specifications 16, 17–18, 19, 22–23, 31, 36, 38–39, 59; *Z 1 Leberecht Maass* **1**, 17, 20; *Z 2 Georg Thiele* 17, 23, 59: service 2, 31, 39, 41, 44, 47, **47**, 48, 52, 53, 56, 58, 59, 61, **61**, 64, 65, 67, **68–69**, 70, **70**, 72; *Z 3 Max Schultz* **1**, 2, 17, 22; *Z 4 Richard Beitzen* 2, 17
Type 1934A destroyers 9, 12, **15**, 16, 17, 18: armament 5, 18, 20, 23, 27, **27**, 28–29, 31, 59, 67; features/specifications 17, 18, 19, 23, 31, 36, 38–39; *Z 5 Paul Jacobi* **6**, 18; *Z 6 Theodor Riedel* **6**, 18, 36, 38; *Z 7 Hermann Schoemann* 9, **9**, 16, 18; *Z 8 Bruno Heinemann* **6**, 16, 18; *Z 9 Wolfgang Zenker* 18, 22, 23, 59: service 16, 41, 44, 47, **47**, 48, 51, 56, 57, 58, 59, 61, 63, 64–65, 67, 70; *Z 10 Hans Lody* 5, 18, 22, 23; *Z 11 Bernd von Arnim* 5, **17**, 18, 22, 23: service 5, 16, 17, 39, 41, 42, 44, 47, **48**, 52, 53, 56, 57, 58, 59, 61, **61**, 63, 64, 67, 70; *Z 12 Erich Giese* 5, 18, 22, 23: service 5, 8, 16, 35, 41, 44, 47, **47**, 48, 51, 56, 57, 58, 59, 61, **61**, 64, 65–66, **66**, 67, 70; *Z 13 Erich Koellner* 18, 22, 23: service 7, 16, **31**, 41, 44, 47, **47**, 48, 51, 57, 58, 59, 60, **61**, 62, 63, **65**, 70; *Z 14 Friedrich Ihn* 22, 23; *Z 15 Erich Steinbrinck* 22, 23; *Z 16 Friedrich Eckoldt* **6**, 16, 22, 23
Type 1936 destroyers 17, 18, 22, **76**; armament 18, 20, **20**, 23, 27, **27**, 28–29, **28**, 31, 49, 59, 67; features/specifications 18, 22–23, 31, 36, 38–39: *Z 17 Diether von Roeder* 18, 23: service **22**, 28, 41, 44, 47, **47**, 48, 49, 50, 58, 59, 61, **61**, 66–67, 73, 75, **75**; *Z 18 Hans Lüdemann* 18, 23, **28**: service 8, 41, 47, **47**, 48, 49–50, 51, 58, **58**, 59, 61, **61**, 62, 63, 65, 67, 70, 72, 73, **75**; *Z 19 Hermann Künne* 18, 23; service **16**, 28, 41, 44, 47, **47**, 48, 49, 58, **58**, 59, 60, 61, **61**, 62, 63, 64, 65, 66, **75**; *Z 20 Karl Galster* 18, 20, 28; *Z 21 Wilhelm Heidkamp* 18, **18**, 23, 35, 49: service 18, 19, 28, 31, 41, 44, 47, **47**, 48, 49, **49**, 58, 73, **75**; *Z 22 Anton Schmitt* 18, 23: service 12, 20, 28, 41, 47, **47**, 48, 49, 58, 73, **75**
Type 1936A destroyers 18, 35, 77
Type 1936A (Mob)/1936B destroyers 77

U-boats 5, 29, 34, 35, 38, **38**, 46, 58, 59, 70, 73: *U 25* 38, 46, 58, 60, 63, 70; *U 46* 38, 47, 48, 60, 62; *U 48* 60; *U 51* 38, 60; *U 64* 38, 60, 62, 63; *U 559*/*568* 11

Warburton-Lee, Capt Bernard 6, 34, 41, 42, 44, 52, 56, 57
  attacks on Narvik harbour 4, 9, 31, 34, 41, 45–46, 47, 48, 49–51, 71, 73, 74, 77
  death of 34, 47, 52, 56
Whitworth, Vice Adm 9, 41, 42–43, 44, 45, 57, 58, 59–60, 67, 70, 71–72
Wolff, Korvettenkapitän Max-Eckart 39, 52, 53, 56, 70

OSPREY PUBLISHING
Bloomsbury Publishing Plc
PO Box 883, Oxford, OX1 9PL, UK
1385 Broadway, 5th Floor, New York, NY 10018, USA
E-mail: info@ospreypublishing.com
www.ospreypublishing.com

OSPREY is a trademark of Osprey Publishing Ltd

First published in Great Britain in 2018

© Osprey Publishing Ltd, 2018

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage or retrieval system, without prior permission in writing from the publishers.

A catalogue record for this book is available from the British Library.

ISBN: PB 9781472828583; eBook 9781472828590;
ePDF 9781472828606; XML 9781472828613

Maps by bounford.com
Index by Rob Munro
Typeset by PDQ Digital Media Solutions, Bungay, UK

Osprey Publishing supports the Woodland Trust, the UK's leading woodland conservation charity. Between 2014 and 2018 our donations are being spent on their Centenary Woods project in the UK.

To find out more about our authors and books visit **www.ospreypublishing.com**. Here you will find extracts, author interviews, details of forthcoming events and the option to sign up for our newsletter.

Title-page photograph: An image of two Type 1934 destroyers (left foreground, right) with three torpedo boats, 1936. *Z 1 Leberecht Maass* was bombed by German aircraft on 22 February 1940 in a case of mistaken identity, whereupon, badly damaged, the destroyer drifted into a minefield and was sunk. Involved in the same operation, *Z 3 Max Schultz* also ran into a mine while coming to the aid of *Leberecht Maass* and went down in moments, with the loss of all hands. *Z 2 Georg Thiele* would be lost at Narvik. *Z 4 Richard Beitzen* was the only ship of the class to survive the war, being decommissioned in 1945 and scrapped four years later. (NH 81799 courtesy of the Naval History & Heritage Command)

Editor's note

In this book linear, weight and volume measurements are given in imperial units of measurement: nautical miles ('nmi', or simply 'miles'), yards, feet, inches, long tons and pounds. The exception is weapons calibre, where metric is used in some cases, depending on the context. The following data will help when converting between imperial and metric measurements:

1 nautical mile = 1.85km
1yd = 91.44cm
1ft = 30.48cm
1in = 2.54cm
1 long ton = 2,240lb/1.016 tonnes
1lb = 0.454kg

Dedication

To Richard Moore – friend, barrister, and ever-eager ASL whipping-boy.

Acknowledgements

Significant thanks are due to Ron Cope for his generous help, as well as for his permission to cite from his two books on the battles of Narvik, *Attack at Dawn: Reliving the First Battle of Narvik in World War Two* (2015) and *Doomed Destroyer* (2018), the latter of which he made available to us prior to its publication. Thanks are also due to Graham Campbell for his indulgence over a kitchen used for writing rather than cooking; to Geoff Banks for haunting the project in spirit if (thankfully) not in the flesh; and to Nick Reynolds and the team at Osprey for managing the whole process from start to finish.

Artist's note

Readers may care to note that the original paintings from which the battlescenes and cover illustrations were prepared are available for private sale. All reproduction copyright whatsoever is retained by the publishers. All enquiries should be addressed to:

p.wright1@btinternet.com

The publishers regret that they can enter into no correspondence upon this matter.

Imperial War Museums Collections

Many of the photos in this book come from the huge collections of IWM (Imperial War Museums) which cover all aspects of conflict involving Britain and the Commonwealth since the start of the twentieth century. These rich resources are available online to search, browse and buy at www.iwm.org.uk/collections. In addition to Collections Online, you can visit the Visitor Rooms where you can explore over 8 million photographs, thousands of hours of moving images, the largest sound archive of its kind in the world, thousands of diaries and letters written by people in wartime, and a huge reference library. To make an appointment, call (020) 7416 5320, or e-mail mail@iwm.org.uk
Imperial War Museums www.iwm.org.uk

Comparative ranks

Royal Navy:	Kriegsmarine:
Admiral of the Fleet	*Großadmiral*
Admiral	*Generaladmiral*
Vice Admiral	*Admiral*
Rear Admiral	*Vizeadmiral*
Commodore, 1st Class	*Konteradmiral*
Commodore, 2nd Class	*Kommodore*
Captain	*Kapitän zur See*
Commander	*Fregattenkapitän*
Lieutenant Commander	*Korvettenkapitän*
Lieutenant	*Kapitänleutnant*
Sub Lieutenant	*Oberleutnant zur See*
Midshipman	*Leutnant zur See*
Warrant Officer	*Stabsoberfeldwebel*
–	*Oberfeldwebel*
Chief Petty Officer	*Stabsfeldwebel*
–	*Feldwebel*
Petty Officer	*Obermaat*
–	*Maat*
Leading Rate	*Matrosenoberstabsgefreiter*
–	*Matrosenstabsgefreiter*
–	*Matrosenhauptgefreiter*
–	*Matrosenobergefreiter*
Able Seaman	*Matrosengefreiter*
Ordinary Seaman	*Matrose*
Boy (1st and 2nd Class)	–